The Motor
INCORPORATING Motor Cycling & Motoring
Vol. 6, No. 141,
October 11th, 1904.

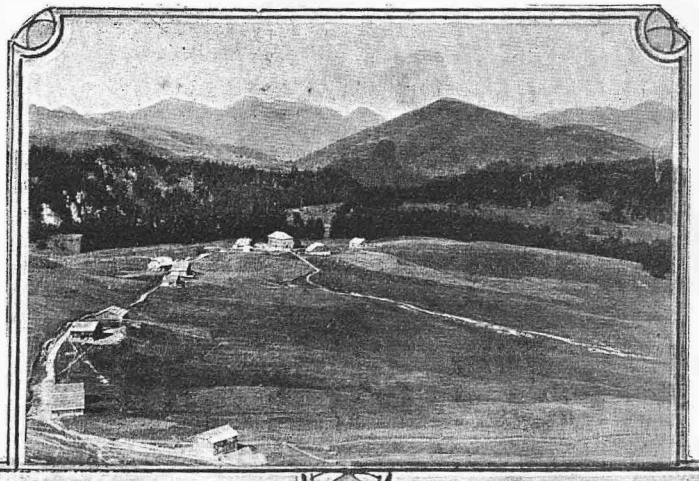
SOME FURTHER EXPERIENCES WITH A LIGHT CAR.

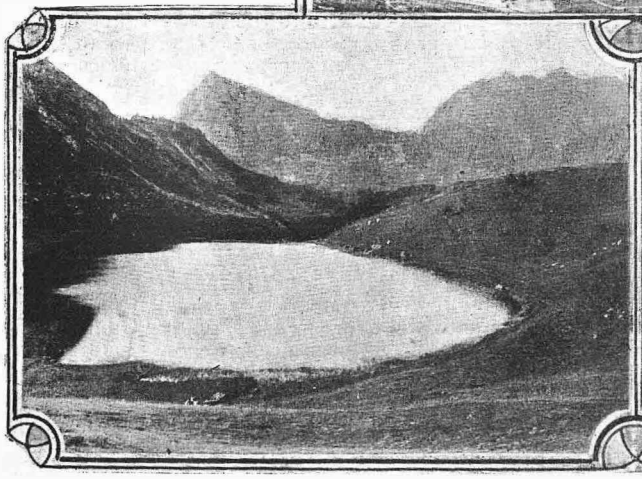
By E. DOUGLAS FAWCETT.

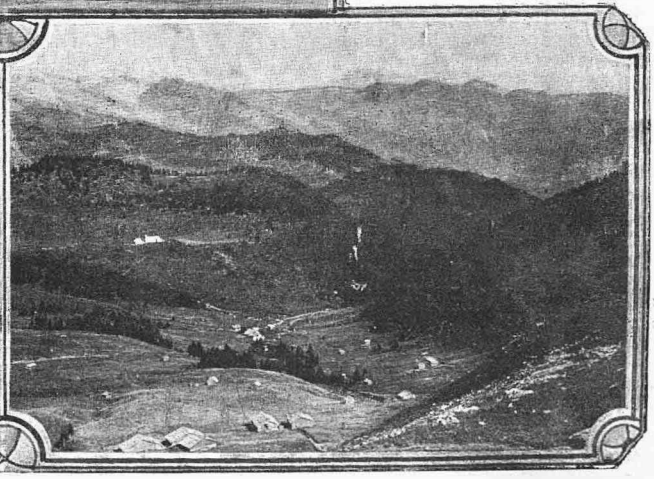
After a month's stay among the mountains, well off the beaten track known to most climbers and tourists, I have to choose between returning home for the National Chess Tourney at Hastings and tackling, with a small but enthusiastic party, some of the Aiguilles of Chamounix. It is a sore struggle of attractions, but, all things considered, we decide to return home and put off the rest of our climbing till next year. Truth to tell, impatience to see how the 6 h.p. De Dion will cross Switzerland decides the issue. We want to leave Lake Leman, cross the Rhone Valley, make the long ascent by way of the Col des Mosses and Chateaux d'Oex to Saanen, and thence pass, by way of Thun, Interlaken, and the Brunig, to Lucerne, leaving the Swiss frontier for Alsace beyond Bale. It is a venturesome programme, the climbs being far more severe than those in the Juras (Dole-Pontarlier route), by which we had come, but the experience will be striking, and knowing the course well, we anticipate a glorious journey. In this hope we are not to be deceived. One fine morning after our return to St. Gingolph, we make ready the faithful car, and are soon spinning merrily along the road that leads beside the slopes of the Grammont, to Bouveret and the Rhone Valley. A mighty wall of mountains, bearing Lausanne, Vevey, Clarens, and Montreux

ON THEIR SUNLIT, VINE-SET FLANKS,

meets the eye across the blue, sail-flecked lake. Fleecy clouds float lazily over the Rochers de Naye and the Tours d'Ai—to our right, green slopes and dark pines carry the gaze up to crags which, last night, were echoing back to one another the thunderclaps of a magnificent storm. On through Bouveret, and anon, across a covered wooden bridge that spans the Rhone, past rude hamlets and hayfields, along rough country roads, till we reach Aigle, a small town lying at the mouth of a beautiful valley, the road up which marks the beginning of the first of our long ascents. Skirting Aigle, for a notice-board warns automobiles not to enter the town, we soon find ourselves at the foot of the ascent which climbs to the left side of the valley to Sepey. We have done this trip on foot, pushing bicycles, in







(1) Praz de Lys: in high Savoy. The hotel lies some 5,000 feet above the sea level. (2) A beautiful mountain tarn near the hotel. (3) View facing the Mont Blanc range. The famous Mont Blanc is on the extreme right, hidden in the clouds.

Further Experiencies with a Light Car.—Contd.

a diligence, and in a private carriage, and know well, therefore, what the tug is likely to be. The road is clear, so I send the car at the slope at full speed, but very quickly have to fall back on the low gear, running, of course, with spark well advanced and throttling the "gas" with the left pedal, so as to minimise the risks of overheating. It is a seven miles or more climb to Sepey, and between Sepey and the top of the Col des Mosses lie many more miles of collar-work, so that it is advisable to leave as little as possible to luck. As things fall out, we rise slowly but surely from curve to curve,

GORGEOUS VISTAS OF MOUNTAIN,

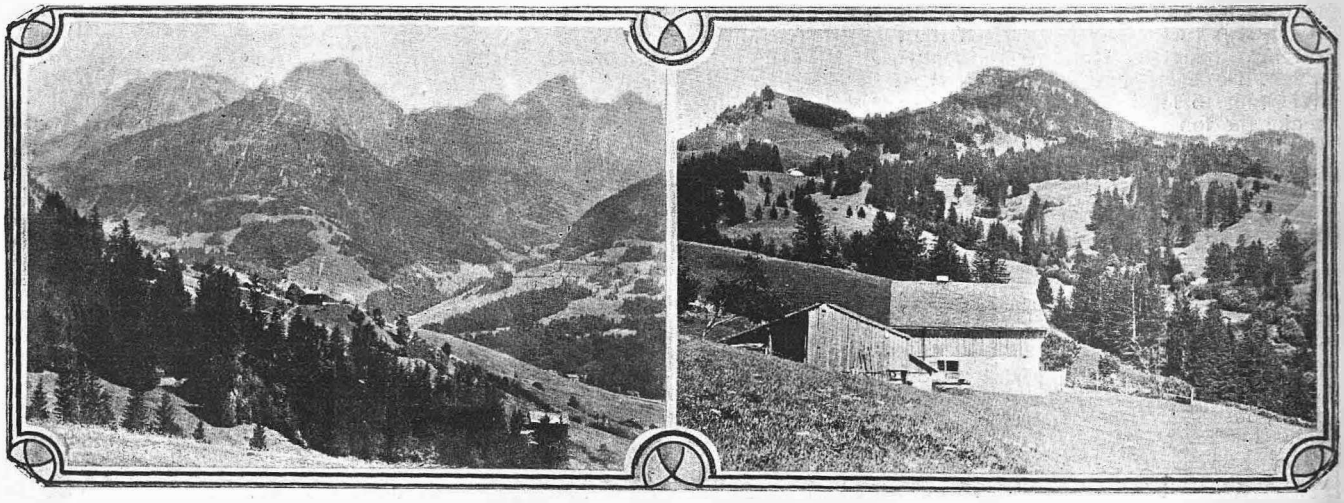
gorge, and distant valley scenery opening out the while. We pass at first vineyards, and, anon, at higher stages, steal through pines, round shadowed curves, and past boisterous waterfalls—here and there seizing a chance to get awhile on our top speed—till at last, topping a stiff bit of ascent, we sight Sepey, a cluster of hotels and chalets which lie on a mountain which looks down the valley towards the Rhone and the Dent du Midi. Leaving the road to Leysin on our left, we pass through the narrow, dirty street, and are tackling the long and severe climb to Comballaz. The gradient becomes a trifle worse here; more "gas" is wanted, and, anon, a rush of steam shows that our water is boiling. However, the car falters not a whit, and, revelling in the landscape, we slowly surmount all the loops of road which lie above and behind Sepey, and, after the last curve has been passed, find ourselves among the thick-set, high-lying pines, between which we have aforetime travelled in sledge—a journey of wonderful winter pictures, but, withal, hardly more striking than the one we are now making. We stop at an easy gradient to admire the panorama before us,

DISTANT SNOW PEAKS KISSED BY CLOUDS, GREEN ALPS BROKEN BY PINE-FORESTS AND STRAY CHALETS, DEEP GORGES, AND VALLEYS,

and misty mountain villages, and, as we gaze, we note, far away below us, the thread of white road which marks the way whereby we have come. Glorious! On again till we reach Comballaz and pass its summer visitors who are watching the car with extreme interest and obvious surprise at its "cheek" in making the ascent. And now we are running on the "Col" with mountain-tops, green alps at this height in summer, bounding our way at no great distance on either side. We are at an altitude of, I believe, some 4,500 feet. Shortly, we top the last portion of the climb, and, after a race along the level part of the "Col," and a superb "freel" down to Etevaz through the pines—with engine stopped and the car running by its own weight—find ourselves skirting the beautiful gorge that opens into the Sarine Valley. I must curb my inclination to dwell on this scenery—I can only say to motorists, try this route, but be sure to go in a car if you elect to do so. Anon, we are "freeling" at high speed down the curves that slope into the Sarine Valley, and with Chateau d'Oex, a straggling village set in a green valley, full in sight. Mounting again, we are soon at our goal, put up at the Hotel Berthod,

NOW CROWDED WITH ENGLISH AND AMERICAN VISITORS

—it is a great resort of tennis players in summer—and receive a cordial welcome at the hands of our old hosts. Two days are spent in this lovely spot—we revisit the mountain chalet where we once made so delightful a stay, and find the peasant friends, who looked after us there, well and happy—then once more I turn the starting handle, and, after a fine run, we are past Saanen (having now entered German-speaking Switzerland), and on the top of the divide which faces the Rublihorn and the Sarine Valley on the one side and slopes downward towards the beautiful Simmenthal on the other. As we stop to use the camera, a huge car flits by in a cloud of dust towards Saanen. A brief delay, a regretful glance at the fair landscape which we are leaving, and lo! we are puffing merrily towards the descent that is to lead us to Thun, the Thuner-See, and Interlaken.



(1) The writer's outlook at breakfast on the balcony of the Chalet at Chateau d'Oex. (2) Side view of the Chalet.

More "freeling," and that on a most liberal scale, down to Zweisimmen, the descent into this lovely valley being at times steep and our progress distinctly and, perhaps, indiscreetly fast. It is a convenience during such descents to switch off the current and stop the engine completely, re-starting it, of course, when wanted, by switching on again and putting in the clutch. Occasionally, also, the use of the engine (when not firing) as an auxiliary brake has its value, as the ordinary brakes are apt to overheat and wear terribly during miles of continuous and fast running. I opine that

SOME MEANS OF SQUIRTING WATER OVER THE HOT SURFACES OF THE BRAKE-DRUMS WOULD BE MOST USEFUL,

and shall certainly devise some such arrangement next year when I purpose to make for Grenoble and the Galibier Pass.

Some way beyond Zweisimmen we note that a storm, first sighted from the divide, while being cradled in the high mountains, is about to break. Luckily, we reach a covered wooden bridge over the Simm, and there we have to stay for two hours, while a veritable deluge descends on to the smoking road. When the sky clears, we have a run over dirty and slippery roads to Erlenbach, and, ere reaching Thun, tackle two side-slips, happily well countered, on a road plastered, if I mistake not, with limestone grease. From quaint

Further Experiences with a Light Car.—Contd.

old Thun we sped to Interlaken beside the Thuner-See, passing en route the railway that leads to Beatenberg; in this portion of the journey, effected mostly on wet roads, we experience the only serious risk of disaster that has threatened us during the tour; a large car, very badly driven, all but swerved into us with a formidable slip. It was going far too fast for the conditions. This lake-side run has a charm all its own, and, delightful as have been our drives along the Savoy side of Lake Leman, I incline to think somewhat less of them in view of this lovely spot. Lake, lake-side villas, the mountain prospect, and the alluring variety in the road itself, all these factors combine to please. Anon we have to climb and travel at some height above the lake, then follows a steep descent, and lo! but a short distance and we are on

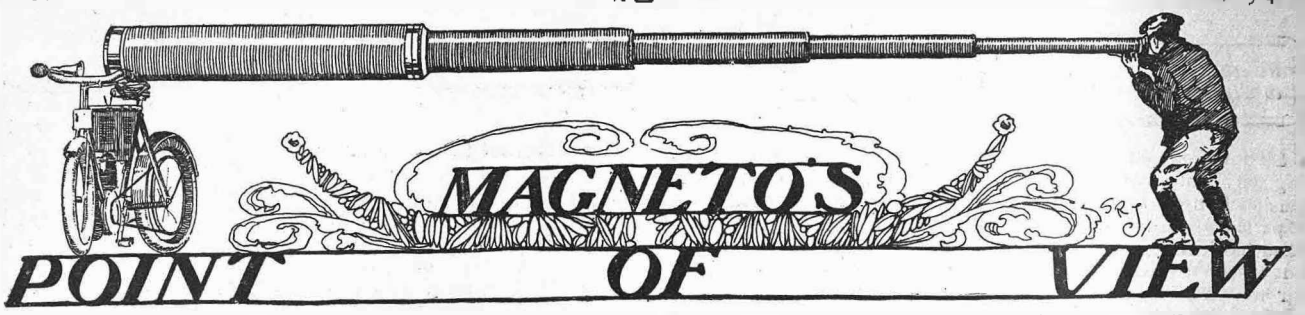
THE TORRENT-LAID FLAT

which bears Interlaken. I omit reference to the Jungfrau, as my readers have heard enough about it ere now—is it not written in the books of Baedeker and Murray? Those, however, who wish to appreciate the full grandeur of this mountain and its snowy brethren should trudge to the top of the Lauberhorn (reached via the Little Scheidegg); more I will not say. Interlaken itself has no attractions for us in August. I stay only long enough to replenish my reserves of petrol and lubricating oil. The vendor of these wares advises me not to try conclusions with the Brunig Pass, the ascent of which, tackled from the side of the lake of Brienz, is, he says, too serious an undertaking for a light car. Needless to say, I am not going to abandon the venture, despite this warning—I know the climb to be serious, but even should my low speed fail me, there will remain, of course, the reverse, and I have not yet seen the gradient which daunts me, if only at the crisis I can arrange to ascend stern first. So we leave Interlaken, beloved of trippers, and not, perhaps, more desirable on that account, and make our way along a very sodden road on the left of the lake of Brienz to the very uninteresting village of that name, whence, leaving the lake behind, we proceed to thread the mountain-walled valley of the Reuss. Evening is drawing on apace as I drop on to the low gear in rounding the first steep curve of the Brunig Pass. Aware of what lies before us, I run the car on the stingiest possible feed of gas.

[The final instalment of this interesting article, which is a sequel to the one by the same writer entitled "Some Experiences on a Light Car," recently concluded, will appear in our next issue.—Ed.]

THE IDEAL FORM OF TOURING.

By



Motorcycling Expenses.

A correspondent recently put the question: "Supposing I pay £40 for a high grade motor-bicycle, what might I reasonably expect it to cost me to run 4,000 miles, and at the end of that distance, what could I reasonably deduct from the original value of the machine?" He does not give any particulars as to the make or power of the machine, and it therefore seems to me that he cannot expect to obtain more than a very approximate estimate. There is one very important factor which determines the cost of running a machine more than any other, and that is the amount of attention which is given to it. By this I mean the amount of care bestowed on the tyres for instance, the lubrication and cleaning of the engine, adjustment of bearings, chains, etc. Some riders will wear out a pair of tyres in a season, whilst others take the precaution of examining the covers regularly, and sealing up cuts, etc., keeping the tyres fully inflated, and not left standing in pools of oil or wet, and, in general, give the tyres such attention as will ensure their maximum life. It is evident, then, that the rider who has his tyres in first-class condition at the close of the season is several pounds to the good, compared with the rider who has to get a new pair of tyres for the next season, or before he can offer the machine for sale.

REPAIRS AND REPLACEMENTS.

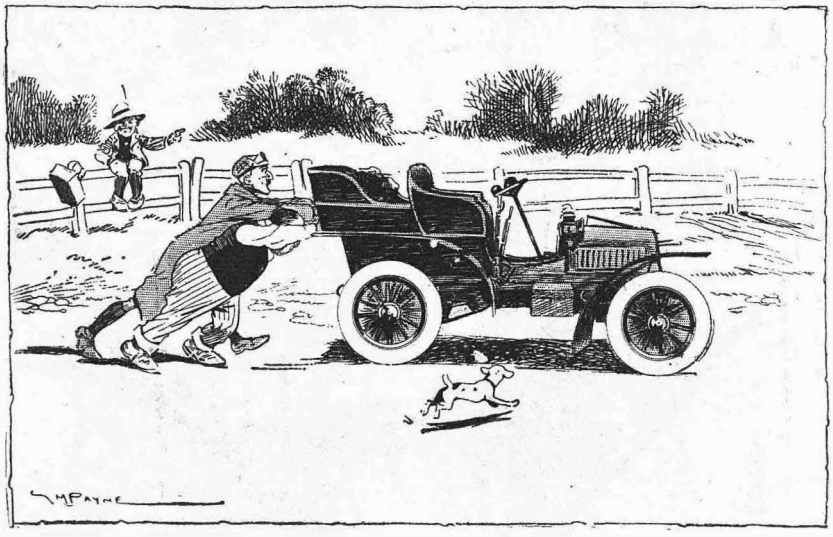
There is the suggestion of repairs and replacements in the engine and machine generally. Theoretically a first-class machine should not require any repairs or replacements worth mentioning in a season's running. There are, indeed, many instances of machines having gone through a season's hard work without requiring a single detail replacing, as doubtless many of my readers could testify to. On the average, it is quite reasonable to say that an exhaust valve, inlet valve, and a set of piston rings would be the maximum number of parts that would require replacing. Of course, there might be one or two sparking plugs and a trembler blade and screw required, but these cannot be strictly regarded as main components of the machine. I think that £1 at the outside would cover easily any replacements in a season's riding of 4,000 miles. The main expenses will be petrol, lubricating oil, and accumulator charging. Now, it would be a very uneconomical mount that would not run 80 miles to the gallon of petrol on average roads, including a fair amount of hill climbing also. If we reckon petrol at 1s. 2d. a gallon, to be on the safe side—although more often than not the cost will not exceed 1s. per gallon—we get £2 18s. 4d. for cost of petrol in a total distance of 4,000 miles, equal to, approximately, 2-10ths penny per mile. Lubricating oil of the best quality obtainable should not cost more than 2s. quart, even in the country depots, allowing a charge of 1 oz. oil every 12 miles—a liberal estimate. This would give a total of 16s. 6d. expended on oil in 4,000 miles.

COSTS OF ACCUMULATOR CHARGING.

Now we come to the vexed question of accumulator charging. If the rider is fortunate in having a couple of really first-class cells that do not lose their capacity, and can get them charged locally, and also has an economical coil, he is quite safe in assuming that one shillingsworth of current will carry him 500 miles, so that the season's riding would cost 8s. for current. Supposing, however, the rider to be unlucky in respect of his accumulators, he might have to purchase a new one in the middle of the season; this would cost, say, 16s., or he might live right out in the country, and have to do his own charging from a primary battery. This would mean an outlay of about 30s., but the actual cost of charging would be small, say 6d. a time at the outside. Taking the first estimate, we get a total cost of £4 2s. 10d. for petrol, oil, and accumulator charging. To this add £1 for spares and replacements, = £5 2s. 10d., or rather more than 1-3rd penny per mile—very cheap travelling, indeed. Supposing it is desired to sell the machine at the close of the season, what will it have lost in value? Now, it will be obvious that it is one thing to put your price on an article, but quite another matter getting it.

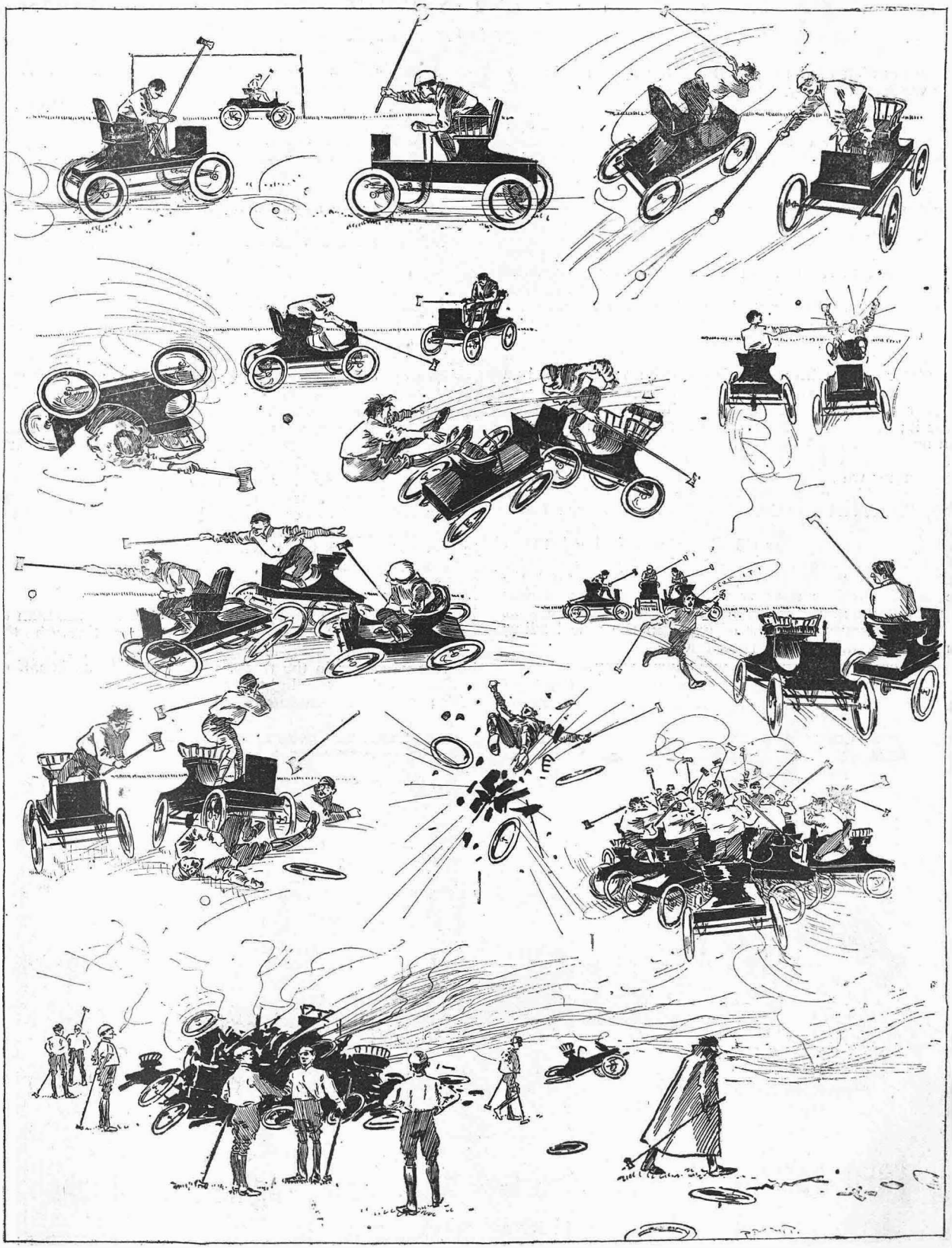
THE VALUE OF THE MACHINE SECOND-HAND.

My own view of the matter is this: Assuming the machine to have been new at the commencement of the season, of that particular year's pattern, and that the enamel and plating are in good condition—there is absolutely no reason why they should not be—and the tyres good for another 2,000 miles, it is safe to write off 1-3rd of the original cost price, and consider the balance as fairly representing the actual market value of the machine. Thus, in round figures, our £40 machine under consideration would be worth £26 10s. The seller then has to get as near this figure as he can for his machine. If he keeps the machine through another season he would have to reckon the value at half the original cost, but he would be lucky to get this. But everything depends on the market and the time of the year in which the mount is offered for sale.



FACETIOUS BOY (to Brown and Whyte): "Steady there, misters, there's a p'lice trap just ahead of yer."

BIO



AUTO-POLO.—A NEGLECTED SPORT—WHY?

TOURING ON A LIGHT CAR. An Amateur's Interesting Experiences.

By the REV. JOSEPH CORKEY.

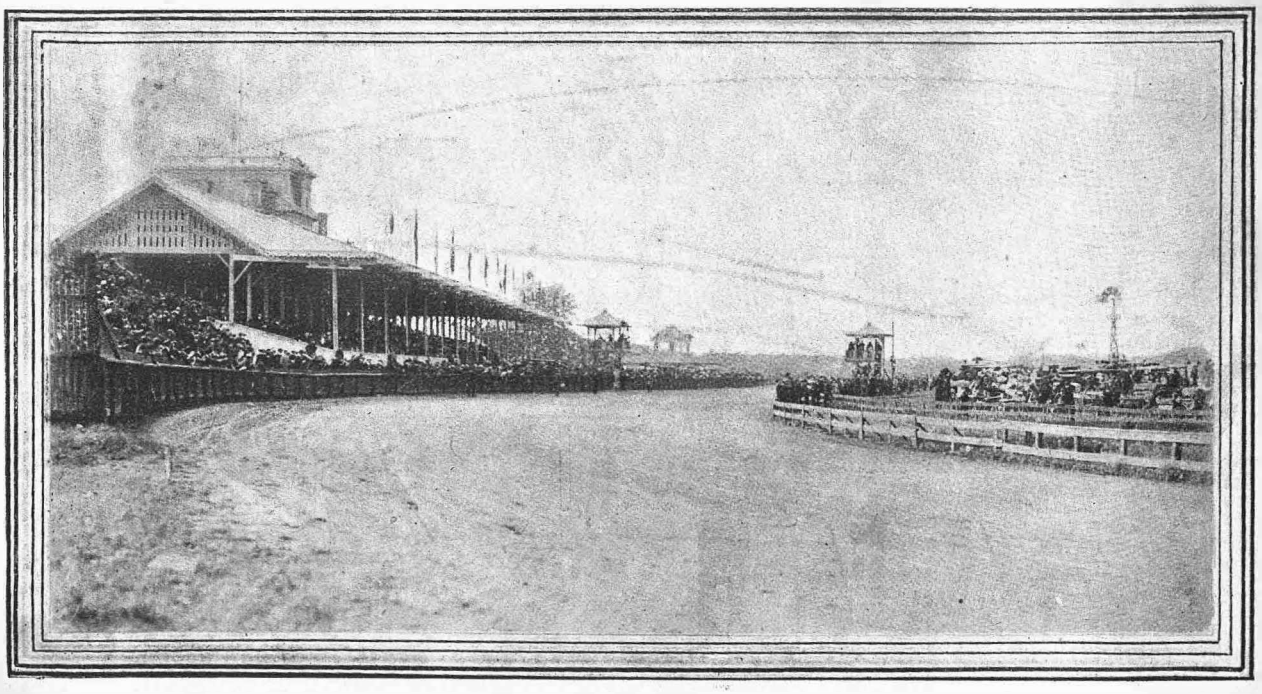
As the question of the reliability of the light car is very prominent just now, my experiences with a 5 h.p. Beeston Humberette may prove interesting. My wife and I have lately returned to Armagh, Ireland, from an 800 miles tour in Scotland, and we never spent a more enjoyable holiday. I purchased the car in April, and had given it a thorough test on some of our worst Irish roads, running 500 miles with no troubles whatever, except two punctures with a nail and a broken bottle. I therefore

STARTED OUT FOR SCOTLAND WITH HIGH HOPES,

running the 60 miles to Larne in four hours. We crossed to Stranraer, and reached Dumfries on the same day, the roads, with the exception of a dozen miles, being in excellent condition. When about eight miles from Dumfries, I had my first experience of engine misfiring, and found that an accumulator, which I had used continuously since my purchase of the car had spent itself. I substituted the spare accumulator I had with me, but could get no spark. It had short-circuited, and run down. My wife suggested trying the other one again, which I did. The hour's rest had revived it; the engine started, and only began to misfire again as we entered Dumfries. Since then, I take care to see that my spare accumulator is in good order. On the next morning we set out from Dumfries for Eyemouth, on the Berwickshire coast. We passed through the lovely Moffatt district and over the mountains to St. Mary's Loch. The car took all the hills with ease. A little overheating was noticed later on, after climbing the stiff hills between Gordon and Greenlaw, and when negotiating the long ascent from Allanton to Chirnside (20 miles further on) we were obliged to stop and investigate. As it was getting late we put up at Chirnside for the night, and the next morning I discovered a plug of paper in the pipe leading from the water tank. This must have

COMPLETELY STOPPED THE CIRCULATION,

and I cannot understand how the car ran the 200 miles from Armagh in that condition. The obstruction was used by the mechanic, who had repaired a slight leak in tank before I left home, for testing purposes, and he had left a part of the plug in the pipe. This was the last trouble of the tour. After spending two weeks in Berwickshire, we turned our faces northwards, through Dunbar and Edinburgh, and across the ferry at Queensferry into Fifeshire. Passing Cowdenbeath and Kinross, we were soon sweeping down the beautiful Glenfarg valley towards Perth. From the latter place we pushed on to Blairgowrie over roads which were very heavy, owing to recent rains, and finally covered the 120 miles from Eyemouth in ten hours, including a stop at Queensferry for lunch. From here we visited Dundee and other places of interest, and then passed south again through Stirling to Coatbridge. To avoid the traffic of Glasgow, we set out for Stranraer on the following day, via Hamilton, and had a stiff climb at Eaglesham. At Kilmarnock we found the main streets all torn up by the tramway authorities, and in some places we had to drag the car on to the footpath in order to make progress. Ayr was soon left behind, and we then began a most delightful run down the west coast via Girvan and Ballantrae to Stranraer, where we embarked for Ireland. I had covered 800 miles without a puncture. The trembler coil and sparking plug were never touched all through, whilst the valves did not require grinding in, nor had I to adjust any part of the engine or gears. The petrol consumption worked out an average of 39 miles per gallon. Every hill throughout the tour, and there were some stiff ascents up through Glenisla in Perthshire, was taken with ease. The other evening I brought three passengers up the hill to my manse, which is about a quarter-mile long, and the top part of which rises for 20 yards 1 in 7½. I have cause, therefore, to be well satisfied with my little car, and owe it to "the man of moderate means" to give my experiences through the columns of your widely-read paper. Of course, I have no interest whatever in the trade, and write only on behalf of the reliability of the light car for touring purposes, and with a view to promoting the popularity of motoring.



Scene at Poughkeepsie Race Track, America, on the occasion of a recent motor meet which was attended by twenty thousand spectators. Many people watched the proceedings by hanging over the fences, to their great danger, for racing cars in America are often known to dash through railings with disastrous results.

The Motor
INCORPORATING Motor Cycling & Motoring

The sale of "The Motor" exceeds that of any FOUR motor papers combined.

Conducted by
EDMUND DANGERFIELD
and WALTER GROVES.

Manager:
ERNEST PERMAN.

Proprietors:
TEMPLE PRESS LIMITED.
7, 9, 11, 13, 15, ROSEBERY AVENUE, LONDON, E.C.

OPINION.

Unofficial Trials.

We print elsewhere a letter from Mr. Archibald Ford in reference to the leading article which appeared in our issue of September 27th, under the heading of "The Evils of the Unauthorised Trial." Mr. Ford says that he does not himself believe that our remarks were intended to apply to him, but he considers that they were made with such vagueness as to suggest that they were levelled at him. We have read our article very carefully again with Mr. Ford's objections in mind, and we do not think it is possible for any reader to have been led to suppose that in making our criticisms we had any one trial in mind. The one incident of a specific nature referred to as an example was distinctly stated to have occurred months ago, and could not possibly have been taken to apply to a ride which had only just concluded. For the rest, our criticism was directed against a system and a principle, and did not apply to any particular trial or any particular individual. We have nothing whatever against Mr. Ford, and we might add that before commencing his ride he himself urged us to provide two observers. This, solely on principle, we were compelled to refuse, as we hold strong opinions on the subject, and contend that much greater strictness should be employed in the appointment of observers. Mr. Ford is an advertiser in this journal, and even if he were not, it is obviously improper to ask the public to accept the evidence of observers who are connected with journals or concerns that possess, or anticipate the possession of, a competitor's business support. Such duties should only be undertaken by those who are in every way disinterested, and who are so regarded by some recognised authority.

Repairs and Spare Parts.

During the present season we have been the recipients of quite a number of complaints from readers with regard to repairs done to, and spare parts supplied for, motorcycles and light cars by a small section of the trade. Practically all have been unanimous on two points, viz., that the charges for them have been excessive, and that the repairs have been effected only after unnecessary delays. As we have said, these charges have only reference to certain firms and have not a general application. The man of moderate means, as the designation implies, has not unlimited wealth at his command, and it is therefore a serious matter for him when he is called upon to meet heavy bills for motor repairs. The continued success of the light-car movement depends to a very great extent on economy as regards cost of running and the upkeep of the vehicles, and that being so, it is apparent, we think, that it is to the trade's best interest to meet the owners of automobiles as much as possible in the matters of repairs and replacements—that is, of course, as far as is compatible with fair and legitimate profits. It is to be hoped that those to whom these criticisms apply will consider them in the spirit in which they are offered, and that they will recognise the fact that automobilism will be an impossible pastime to the majority if repairs are to afford opportunities for excessive charges. Then, again, the necessity for despatch in carrying these out is pretty obvious, for lengthy delays are often exceedingly inconvenient and invariably exasperating. Several correspondents have called our attention to the fact that in the majority of instances trivial repairs and common replacements to motorcycles cannot be effected even in some of the leading depots on Holborn Viaduct, but that the machines have to be despatched to the factories in the provinces for them to be carried out, and even then the work is often not expeditiously accomplished. This is a state of affairs that could easily be remedied by stocking a reasonable supply of spare parts and by having a practical man always at hand.

Hoods for Light Cars.

We have just had fitted to a Clement-Talbot car, which we have been driving with great satisfaction for the past twelve months, a Cape Cart hood, and have no hesitation in saying that we have never indulged in a more successful purchase. The hood in its various forms possesses many advantages over any other covering, and we are inclined to the opinion that, whatever the weather may be, the ordinary type of car is incomplete without it, unless, of course, it is substituted by something more costly; but there is nothing to touch it for value, all round usefulness or detachability. In dry weather and when open it is an excellent dust screen; in wet weather it affords complete protection, and whether open or closed it is a distinct adornment to any car. We strongly advise those of our readers who at present possess open cars to follow our example. The subject of hoods is dealt with in a special article, which will be found in this issue.

The Hooded Vans Act.

It is remarkable how quickly this Act has fallen into disuse. Passed in the beginning of the year, and enforced from May 1st, cyclists and motorists hailed it as being certain to put an end to the many accidents which had been caused through drivers' temporary or partial blindness. But, apart from the difficulty of deciding what constituted a clear and uninterrupted view, the personal equation, in the form of the magistrate, soon succeeded in rendering the Act a dead letter. The police enforced it with great zeal for the first week or two, and many owners whose vans did not comply with the law were fined heavily for their negligence; then, as is so frequently the case, the police seemed to lose interest in the business and prosecutions ceased. At the present day we observe any number of vans in as absolute a condition of blindness as ever they were, and nothing is said or done to apply the remedy; perhaps the fact that they nominally possess windows in the hood (blocked with pink muslin curtains in some cases) is now considered a sufficient compliance with what once promised to be an effective and useful measure.

Light Motor-bicycle Trials. "The Motor" Suggestion Adopted.

In our issue of September 17th we suggested that in order to encourage the production of light-weight, efficient motor-bicycles, the Auto-Cycle Club should conduct a series of trials in the early part of the year. We are pleased to record that this matter was considered by the Club at a meeting held on Friday last, and that it was decided to promote such trials as we suggested, to take place early next year. The trials are to extend over a week, and the object is to ascertain by actual tests which is the most efficient and most durable light motor-bicycle. The weight limit is to be 100 lbs., and the offer of "THE MOTOR" to provide a trophy to be won outright in this competition has been accepted. It need hardly be added that this decision is very gratifying to ourselves, and that we shall do our utmost to make the trials successful in every way.

HOODS FOR LIGHT CARS.

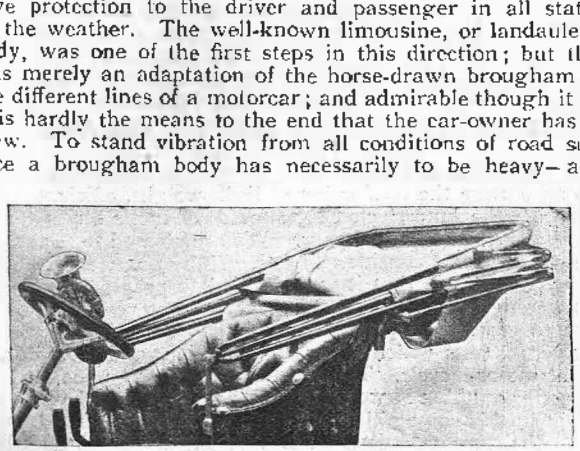
HOW TO MAKE YOUR CAR A SERVICEABLE WINTER VEHICLE.

Few of those who were present at the Thames Embankment upon the historic Motor Emancipation Day in November, 1896, would have imagined in their wildest flights of fancy that the horseless carriage, in the short time of eight years, could occupy the position it now holds for locomotion purposes in every part of the world. Jeered at as a cumbersome piece of machinery, and only fit to be played with by faddists and enthusiasts, the early type of car, with its uncertainties and constant breakdowns, has now given place to the delightful modern automobile, which is capable of performing all the work it is called upon to do: requiring only for continued good running such moderate attention, that the most unmechanical of men can drive and operate one with a mere smattering of practical knowledge. More and more is the motorcar being adopted for all purposes of life, both for business and pleasure; but, because the merely pleasurable phase of motoring has hitherto only appealed to the majority of buyers, it must not be supposed that its utilitarian side has been neglected by designers and manufacturers. Although, apparently, devoting all their energies to the turn-out of pleasure vehicles, makers have not been unmindful of the huge possibilities which lie in the production of vehicles which, whilst promoting the comfort of the occupants, shall

SERVE EQUALLY WELL ALIKE FOR THE USE OF BUSINESS AND PROFESSIONAL MEN

in everyday life. In this direction lies a market that has not hitherto received the attention it deserves. Probable purchasers may perhaps have been deterred from buying by the thought that the motorcar is a fair-weather carriage, fit only for use when the sun shines, and requiring to be put under shelter in wet or wintry weather.

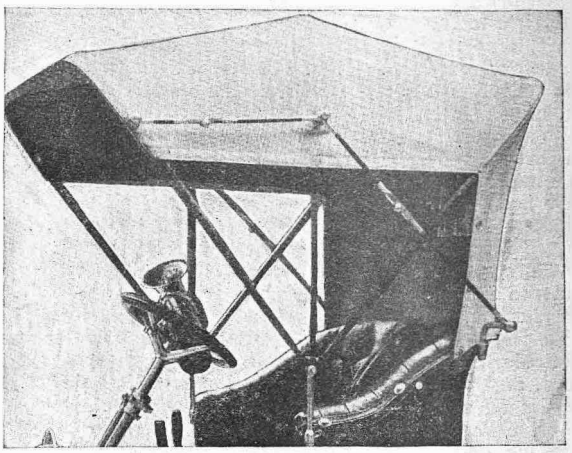
Two probable reasons may account for the peculiar supposition that a motor is only suitable for dry days: the fear of side-slip, and want of protection from our variable climate. Side-slip is certainly an evil; but the numerous excellent devices now on the market can secure immunity of slipping on grease and mud to the most timid of drivers. The demand for an all-the-year-round car having arisen, inventive minds have set to work to devise something that shall give protection to the driver and passenger in all states of the weather. The well-known limousine, or landaulette body, was one of the first steps in this direction; but this was merely an adaptation of the horse-drawn brougham to the different lines of a motorcar; and admirable though it is, it is hardly the means to the end that the car-owner has in view. To stand vibration from all conditions of road surface a brougham body has necessarily to be heavy—and large weight means increased horse-power for movement at a reasonable speed. The detachable brougham top is a further movement for protection, but is not entirely suitable to the man who wishes to look after his own car. It certainly gives full protection in bad weather, and can be entirely removed at will; but its removal, whilst quickly effected, requires outside assistance.



View of hood acting as dust screen.

WHAT IS NEEDED IS SOMETHING WHICH CAN BE QUICKLY ATTACHED AND DETACHED SINGLE-HANDED;

that is substantial enough for the intended purpose, and yet of sufficiently light weight to be no tax upon the power of the engine; an addition to the fitment of the car which shall be ornamental as well as useful; and beyond all else must be moderate in price. Accompanying this article are some



Hood as sun screen and dust protector.

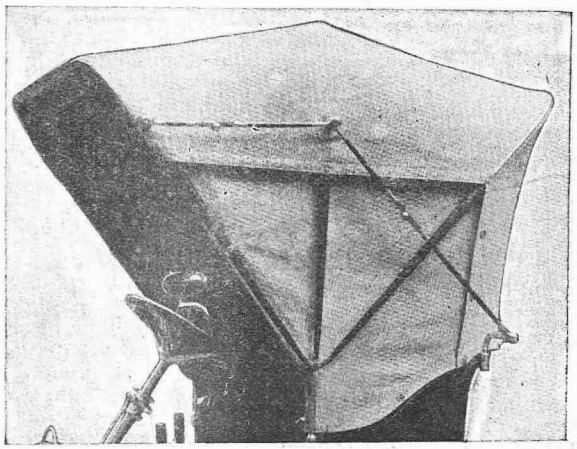
illustrations of several cars, fitted with protective arrangements of a nature that seem to fulfil all requirements in a satisfactory manner. The small car (a 6 h.p. Wolseley) is fitted with what the makers designate as the Canadian type of hood, and serves three distinctive purposes; firstly, with the hood right down a really efficient dust screen is provided; in the second position it permits of use either as a sunshade or to keep off summer showers; thirdly, with the addition of the side wings, the fullest protection is given against the heaviest storms of rain or snow. The complete hood can be fitted to the car in a few minutes by one person, and can as quickly be removed—all the work necessary being the screwing on of four nuts. Four small and unobtrusive brackets of steel, nickel or brass plated to match the rest of the car metal-work, are fixed by the makers at the factory, or by a local repairer, and remain permanently; tubular steel sockets, having eyes at their ends, are slipped on to the brackets, and are held in position by the nuts before mentioned. The steel sockets extend upwards, and towards the tops carry light wooden slats, of ash or suitable material, which are shaped to the form desired to be given to the hood itself. For this type of hood, straps from top of hood to front of bonnet are dispensed with, the hinged ex-

Hoods for Light Cars.—Contd.

tension fittings keeping the whole framework rigid enough to withstand the strongest gale.

THE HOOD ITSELF IS COMPOSED OF WATERPROOF TWILL,

two thicknesses of material being employed with a thin layer of rubber between. The edges are turned over and solutioned down with rubber solution, stitched with saddlers' thread, and finally bound with leather: a method of manufacture calculated to withstand the roughest usage.



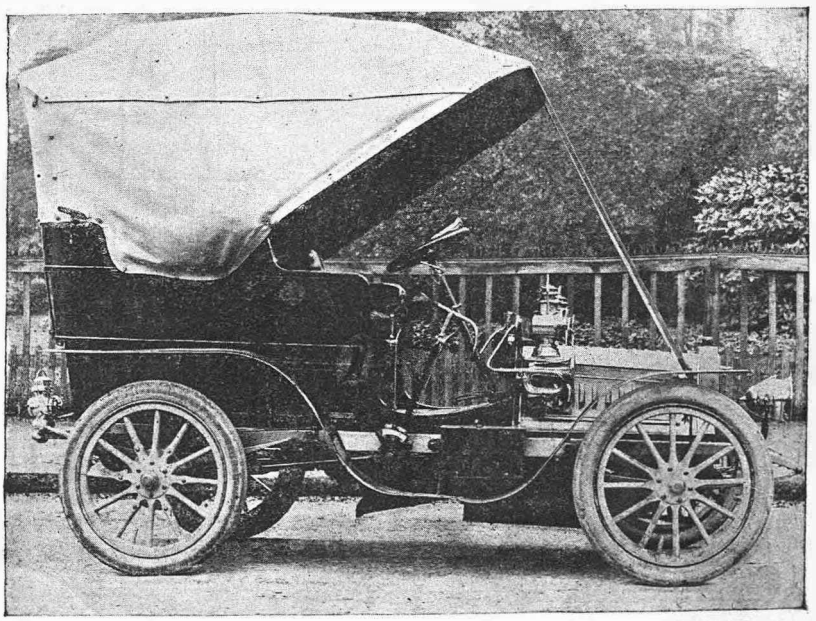
Protection against all weathers.

The side wings, or flaps, are attached to the top of the hood by what are technically termed "glove fasteners"; at intervals, round the bottom of the wings and back flap, brass or nickeled eyes are strongly attached, these fitting over metal turn buttons that are screwed just clear of the top edge of the car body. In the middle of the back flap a transparent celluloid window is fitted enabling the occupants to obtain a view to the rear; this back flap is also detachable, and when it and the side wings are removed, a light sunscreen is left that does not form any obstruction to the quick movement of the car by windage. For standard types of body the Lacre Motor Co., Ltd., Poland Street, Oxford Street, W., to whom we are indebted for our illustrations, keep these hoods and fittings in stock, ready to affix at an hour's notice; for unusual patterns it suffices for the car to be sent to their works to have measurements taken, and the owner can continue its use until the hood is ready, when it can then be fitted in a very short time. The total cost of the hood we have described, including fittings, varies from £10 to £15, depending upon the material used for the hood and the finish of the metallic portions.

The larger car we illustrate is shown fitted with a "Cape Cart" hood, and this, whilst following generally the design of the Canadian hood, possesses, owing to the greater area to be covered, some slight modifications. Five tubular steel sockets are used on each side of the car, each set of five hinging upon one central bracket; the rear and front sockets fit on the bracket itself, and themselves, at a short distance above the ends, carry two extension pieces to which the other three sockets hinge. When the hood lies at the back of the car the extension pieces fold up parallel with the sockets, and the weight is taken by small leather-covered buckets screwed to the two extreme corners of the body. The use of extension pieces to keep the hood rigid at a similar height to those on the Canadian type has been found inadvisable on account of the complication involved in the fitting and the considerable increase in weight. Practice has shown the effectiveness of the two long straps from the front slat of hood to the front corners of the car frame, and this construction permits quick fixing in an emergency upon the road. The detachable side wings and back flap are held in position by snap fasteners and turn buttons; the back flap, if wished, can be fitted with two or more celluloid windows. For additional comfort, the passenger portion of the car can be entirely enclosed by the fitting of a front flap from the top of the hood to down behind the front seats; this front flap is usually fitted with celluloid window panels. With this useful addition the back part of the car is completely enclosed. The driver can be further protected by what is termed a storm flap, a sixth slat being added at the extreme front of the hood, which drops downwards some 10 or 12 inches when in use. In ordinary weather this can be strapped back to the normal hood front.

A FURTHER REFINEMENT

is the fitting of a glass screen, carried upon sockets affixed to the dashboard, and extending upwards to a sufficient height as to enable the storm-flap to fall down over the front of it. The Cape Cart hood costs from £15 to £20, without the glass screen, but as large cars vary so much in shape of body the metal work has usually to be specially forged up for each order, and the hood material designed and cut for the specific job in hand. The colour of the hood chosen by most purchasers is usually khaki; other shades such as blue, green, or to match the body painting can also be used. With either type of hood we have described, the objection to use the car in winter is quite removed; no contingent stress of weather need deter the owner, and the ample protection afforded to both driver and passengers enhances the value of the motorcar for every class of work. One feature of the folding hood must not be overlooked: when once fitted, most purchasers retain it upon the car, as a well-designed fitment of this character adds considerably to the appearance of the vehicle. Hitherto, hoods have not met with general favour on account of their cumbersome appearance, but designs such as we have described cannot fail in the future to become essential parts of the equipment of a car.



In full rig: an ideal wind and storm shield.

NEWS

The Light Motor-bicycle Trials.

The Auto-Cycle Club adopts "The Motor" suggestion.

A series of trials for light motor-bicycles, extending over a week, will be held early next year.

Mr. Burdett-Coutts, M.P., speaks of the motorcar as "this new invention which shakes the body like a jelly-fish and fills the nose with petroleum."

The speed trials at Blackpool next Friday and Saturday will be run over the splendid promenade which is one of the features of this popular seaside resort. This track is asphalt, and is 40ft. wide and about a mile and a quarter in length.

A heavy fine—£20 and costs—was imposed on a London motorist named Rupert Langley for recklessly driving a car at Matlock. Defendant did not appear in court. The magistrates endorsed his license, expressing the opinion that they had very nearly sent him to gaol.

The hon. sec. of the Birmingham Motor Cycle Club announces that the subscription of new members joining after October 1st last, will cover a period up to December 31st, 1905. The subscription is 10s. 6d. per annum, and the entrance fee 5s. The badge of the club is provided gratis.

At the recent meeting of the Irish Automobile Club a hill-climb, over a course of seven-eighths of a mile, with a maximum gradient of 1 in 8 and an average of 1 in 11, was run off. In Class A, Mrs. Mecredy (on a 6 h.p. De Dion) won in 4 mins. 37 secs. Class B, L. J. O'Higgins (10-12 h.p. Gladiator), 5 mins. 48 secs. Class C, F. V Westby (16-20 h.p. Argyle), 3 mins. 22 secs. Class D, W. G. D. Goff (20 h.p. Clement), 3 mins. 15 secs.

Coming Events.

Oct. 14. Leipzig Motor Show.
" 14, 15. Motor Racing at Blackpool.
" 20. Commencement of the Automobile Club's Winter Session. On this occasion Mr. W. Worby Beaumont will read a paper on "Development of the Small Car."
" 23. Annual Hill Climbing Competition at Chateau Thierry (organised by "L'Auto").
" —. Paris Industrial Vehicles Trials (A. C France).
" 28. Lincoln A.C. Dinner at the Saracen's Head (to be followed by a paper by Dr. Ormandy on "Alcohol for Commercial Purposes").
" 30. Gaillon Hill Climb (also organised by "L'Auto").
Nov. 18 *to* 26. Stanley Cycle and Motor Show (Agricultural Hall, London).
" 20. 100 Kilometres Trial (A.C. Algeria.)
" 30. Auto-Cycle Club's Annual Dinner.
Dec. 5 *to Jan.* 15. Exhibition of Engines for Motor Boats and Airships, and Heavy Automobiles; also special prominence to devices for alcohol consumption (Cours de la Reine Conservatoires).
" 9 *to* 26. French Automobile Salon (Grand Palais, Paris).
" 26. *to Jan.* 2. Motor Union of Western India Reliability Trial.
" 31. Entries close for 1905 Gordon-Bennett Contest.
" 8. Vanderbilt Cup (America).
" 9. Gaillon Hill Climb.

On August 18th 7,193 automobiles were registered in London, but on October 7th this number has been augmented to 7,669—an increase of 476. This is an average of 68 per week, which is very satisfactory indeed, considering the lateness of the season.

November 8th, 15th, and 22nd.

These are the dates of "The Motor" Show Numbers.

The Daimler motor omnibuses running at Hastings earn 1s. 6d. a mile.

Motor buses will be "laid on" to the sandy deserts of Khartoum before long. A special form of tyre has been devised.

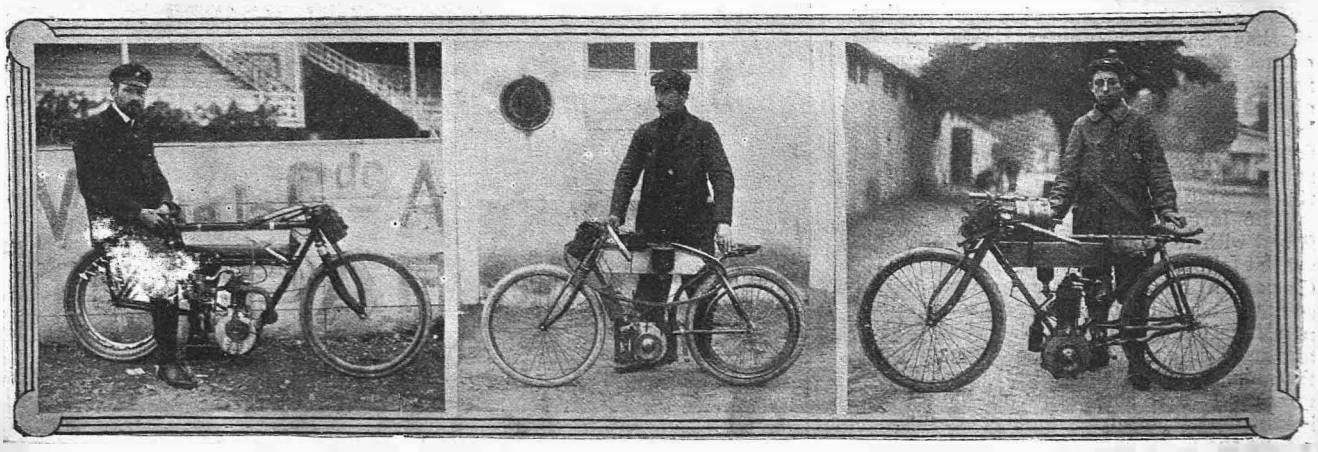
Mr. C. J. Glidden, the auto-globe-trotter, has given a cup to the American Automobile Club to be competed for annually over a 1,000 miles' course.

The County Council of Lincolnshire (Holland Division) have applied for powers to prohibit motorcars on certain of their roads within "lighting-up" hours.

Our readers should note that the price of the Osborne free engine pulley is £2 15s. and *not* 15s. as stated in the advertisement appearing in our issue of the 4th instant.

Prince Henry of Prussia has taken over the patronage of the International Automobile Exhibition which is to be held in Berlin from February 4th to 19th next year. Some 2,500 square metres of space have been disposed of up to the moment of writing.

The liability of a motorist to carry his license about with him continues to be a debatable point. It has been suggested that any motorist summoned for the offence of not producing his license on demand (provided, of course, that he be willing to produce it within a reasonable period) should base his defence on the August (1903) debates in the House of Commons, and, if necessary, subpœna the President of the Local Government Board as a witness.



TIER DE LITRE (CYLINDER CAPACITY) TRIALS IN PARIS.
1. Yourassof, a member of the Peugeot team. 2. Devilly, one of the "La Foudre" riders. 3. Berger, and one of the Lamaudiere machines. **(See page 266.)**

NEWS.

The Vanderbilt Cup: Victory of Heath on a Panhard.

The race for the Vanderbilt Cup was held on Saturday over the Long Island course. The course is 32½ miles long, and it was covered 10 times, giving a total of 325 miles. Four nations—America, France, Germany, and Italy—competed, and the 18 starters left in the following order:—1, Campbell Muir (Mercedes), Germany; 2, Gabriel (De Dietrich), France; 3, Tracy (Royal) America; 4, Webb (Toledo), America; 5, Arents (Mercedes), Germany; 6, Lyttle (Toledo), America; 7, Heath (Panhard), France; 8. Hawley (Mercedes), Germany; 9. Werner (Mercedes), Germany; 10, Sartori (Fiat), Italy; 11, Bernin (Renault), France; 12, A. Clement (Bayard-Clement), France; 13, Tart (Panhard), France; 14, Teste (Panhard), France; 15, Schmidt (Packard), America; 16, Crocker (Simplex), America; 17, Wormser (Mercedes), Germany; 18, Wallace (Fiat), Italy.

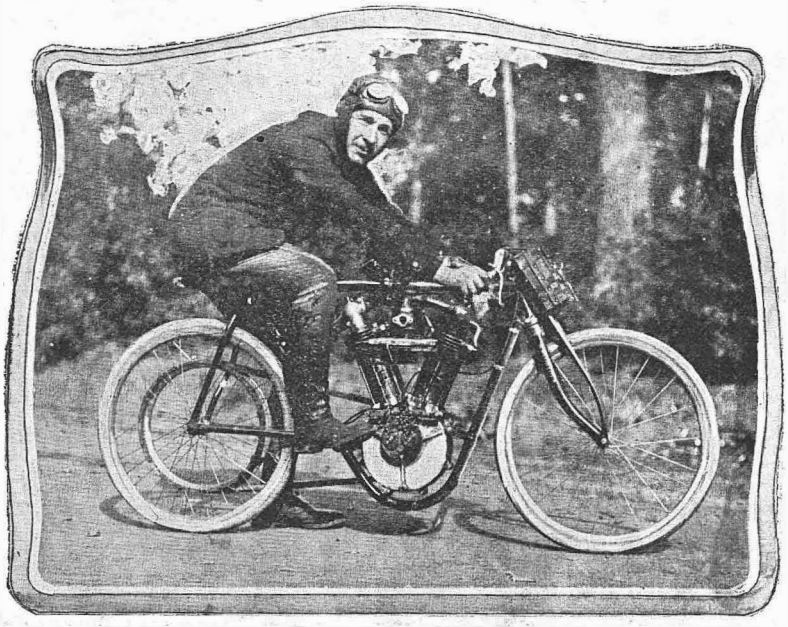
In spite of an attempt by anti-motorists to get an injunction against the race a start was made at 6 a.m. A huge crowd lined the sides of the course. The race was remarkable for the number of accidents—one, unfortunately, fatal—which happened, and it is stated that glass and nails were maliciously strewn on the course. One of the 60 h.p. Mercedes cars, driven by George Arents (an American), swerved violently through a deflated tyre; Arents was pitched out, and the mechanician, in endeavouring to right the car, upset it, and was crushed to death beneath it. Webb, on a Toledo, narrowly missed an express train which, by some bungling, was allowed to cross the road. The French cars gave early evidence of superiority; at the end of the first round France held the first three places with Heath (Panhard), Gabriel (De Dietrich), and Clement (Clement-Bayard). Before the end Gabriel came to grief, and had to abandon the contest, leaving Lyttle (America), on the 30 h.p. Pope-Toledo, to take third place. The final result was: Heath 5 hrs. 26 mins. 45 secs.; Clement, 5 hrs. 28 mins. 13 secs.

THE DOURDAN SPEED TRIALS.

Two Motorcycle World's Records Beaten.

The annual speed trials at Dourdan in France were held on Monday, October 3rd. The trials consist of a Standing Mile and a Flying Kilometre along a stretch of road in the Dourdan Forest. The meeting is promoted by the Paris sporting daily "Le Vélo," and it usually attracts some of the best machines and men in France. The events are open to motorcars and motorcycles, racing and touring, and these are divided into classes according to weight in the racing section, and according to price in the touring section.

Many remarkable performances have been accomplished during the last year or two at Dourdan, and the meeting is always looked forward to in French motoring circles as likely to provide some new sensation and some fresh world's record. We may say here at the outset that this year's trials were disappointing, except in so far as the racing motor-bicycles were concerned. In this department both records were beaten by Lanfranchi on a Peugeot machine—the old-established French firm thus rehabilitating itself in public favour after its indifferent performances in the Ardennes, and in the eliminating race for the motorcycle "Gordon-Bennett."

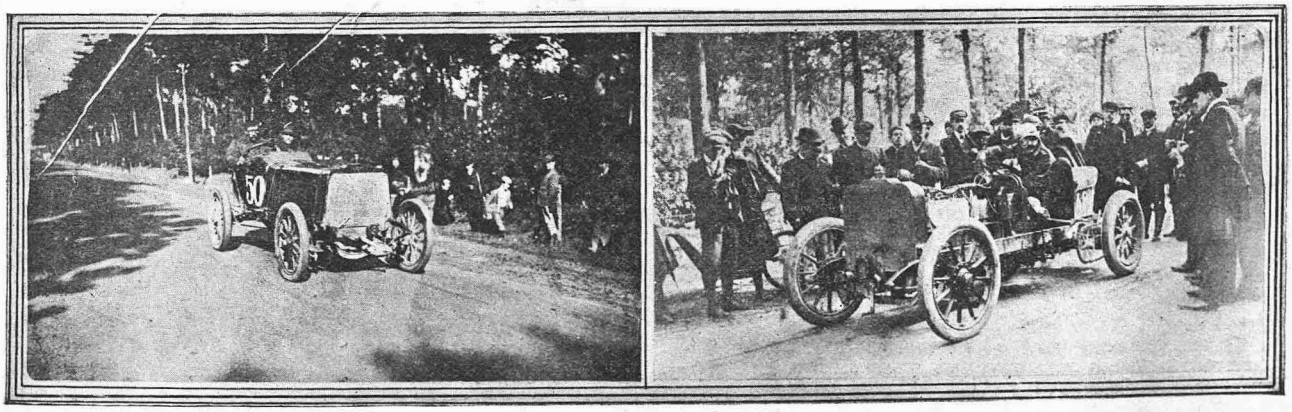


The Dourdan Speed Trials: Lanfranchi and the Peugeot motorcycle on which he established records in the flying kilometre and standing mile events.

Lanfranchi's time of

29½ SECS. FOR THE FLYING KILOMETRE

was wonderful: it was actually five seconds faster than his own record of 1903; and five seconds over a course not greatly exceeding one thousand yards in length take a lot of knocking off. Lanfranchi's speed was roughly 77 miles an



THE DOURDAN SPEED TRIALS.

1.—Barras, on the heavy Darracq racer which beat the local flying kilometre record by covering the distance in 25⅘ secs. This was the fastest performance in the Trials.

2.—The 100 h.p. 8-cylinder Dufaux (driver, F. Dufaux), which ran for Switzerland in this year's Gordon-Bennett. Its appearance at the Dourdan meet created much interest.

NEWS.

hour. In the Standing Mile, again, the same rider and machine put up fresh figures of 57⅘ secs.—Olieslagers' Belgian record of 59⅘ secs. on a Minerva being well beaten. Lanfranchi's speed over the mile (from a standing start) works out at a fraction under 63 miles an hour; so that it must be admitted that even if the French construct their motor-bicycles with a view to speed alone, they at least get what they aim at.

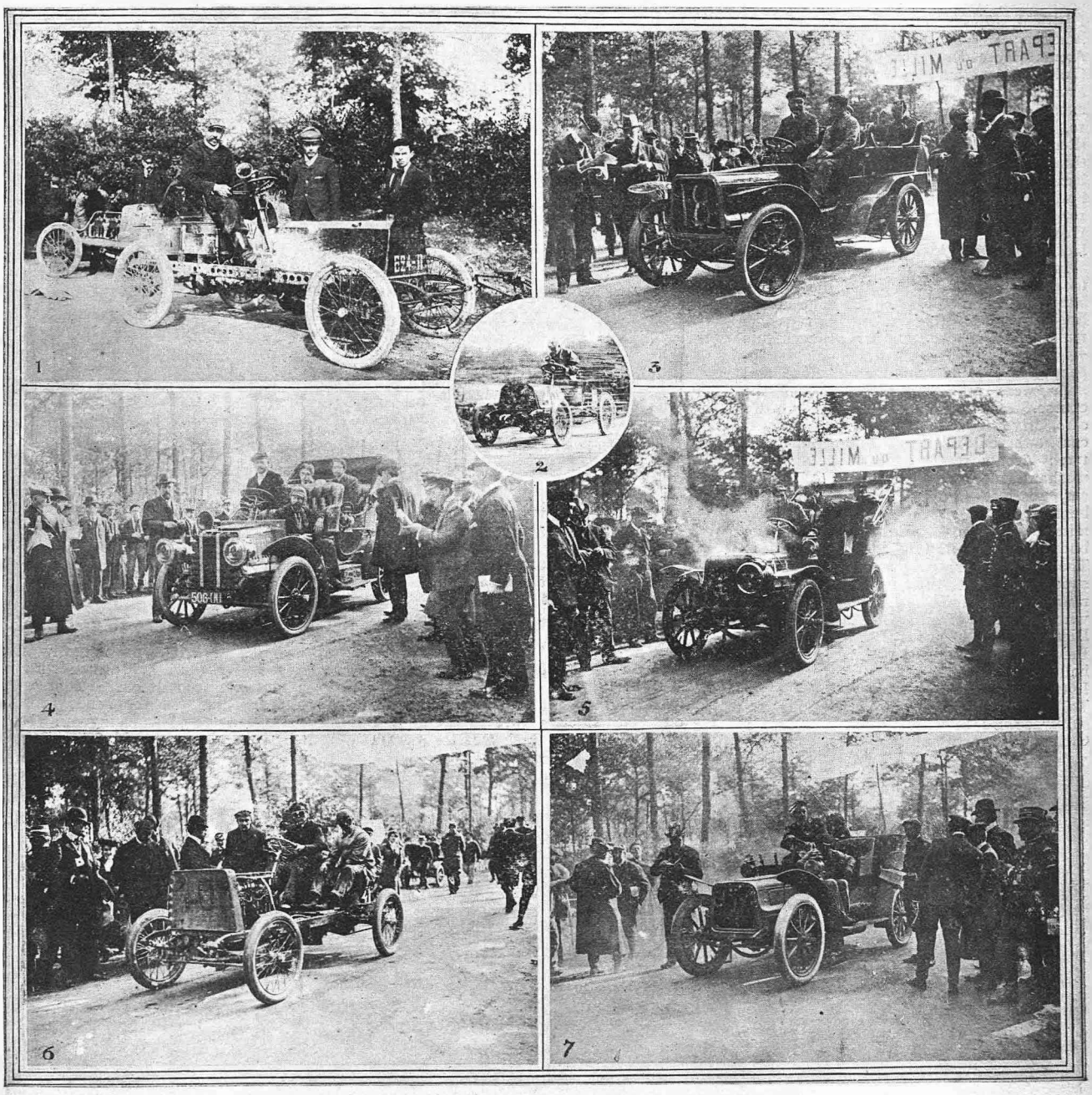
Apart from these remarkable performances of the Peugeot machine, nothing very striking was done by the motorcycles—if we except the 30⅘ secs. of Cissac (on a Peugeot) and the 32 secs. of Olieslagers (Minerva); both splendid trials, but overshadowed by the winner's figures.

The car section was disappointing so far as world's records are concerned—none were broken—but the light Darracqs and the Gardner-Serpollet steam cars acquitted themselves creditably. Hemery made no secret of the fact that he was going for Rigolly's sensational 21⅘ secs. for the Flying Kilometre; but his racing Darracq never seemed to get properly into its stride, and he finished up with higher figures than the Peugeot motor-tricycle. The huge

EIGHT-CYLINDER GORDON-BENNETT "DUFAUX,"

which carried the Swiss colours in the Taunus this summer, also failed to exhibit any remarkable speed, but this is not surprising, seeing that it was designed for continuous running over a 350-mile course rather than for a short sharp dash of a thousand yards.

In the touring car section, the Boyer



THE BOURDAN TRIALS.

1.—De la Touloubre on a Darracq, which was a winner in its class. 2.—Touloubre at full speed. 3.—Bureteste on a light touring Boyer. 4.—Pelser (Gardner-Serpollet), the victor in his category. 5.—Nielson, who was second in his class. 6.—Emery on his victorious Darracq. 7.—H. Loste (Boyer), who secured a second award.

NEWS.

cars and the Serpollet "steamers" carried off chief honours, and it was noticeable that the cars were more appropriately upholstered, and had more of the comfortable appearance of genuine touring vehicles than in former years. One or two of the steam cars averaged over 40 miles an hour, but the general average for the "tourers" was in the neighbourhood of 30 miles in the hour—quite fast enough for a pleasure vehicle.

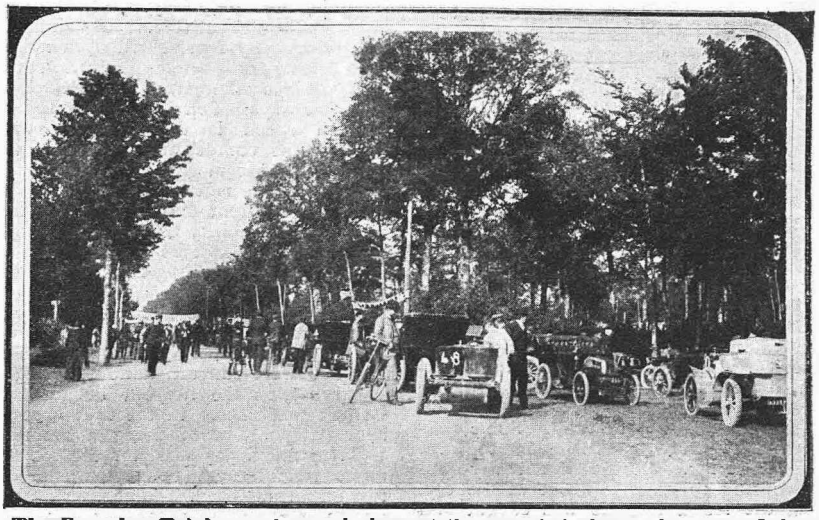
As regards the conditions and the surroundings of the meeting, it was favoured—most unexpectedly—with fine weather. Rain had been threatening all night; indeed for some time it did actually drizzle, but later the sun came out and the eventful day itself was dry. The road, surrounded as it is by trees, was soft in places—the neighbourhood of Dourdan is not an ideal one for a motor speed course; it takes too long to dry. The public attended in fair numbers, but the opening of the French pheasant shooting season kept away a good many sportsmen who would otherwise have been there. A sufficient staff of police was in attendance, and the usual safety barriers were erected—the arrangements generally being very creditable to the organisers.

The timing arrangements, in the capable hands of

THAT PRINCE OF FRENCH TIME-KEEPERS,

Mons. Tampier, and Mons. Gandichard, were perfect, and every facility was afforded artists and journalists of doing their work comfortably and efficiently. By dint of much practice and great enthusiasm, French sportsmen are developing quite a pretty skill in the art of running a motor fixture. We heard various rumours, by the way, in the vicinity of Dourdan, that this year would be the last in which the present track would be used. A more suitable road in the near neighbourhood was spoken of; while some of the officials were in favour of moving away altogether from the shade of the Dourdan Forest.

We append a complete table of results in the two events—the Flying Kilometre and the Standing Mile.



The Dourdan Trials: a general view at the starting place. An idea of the picturesque surroundings is readily conceivable from the illustration.

The Dourdan Trials: Cissac, the well-known track rider, who secured second place in the flying kilometre motorcycle class. His mount was a Peugeot.

Racing Vehicles.

Motor-bicycles (weighing less than 50 kilos).

	Kilos.	Mile.
Lanfranchi (Peugeot)	29½s.	57⅘s.
Olieslagers (Minerva)	32⅘s.	1m. 2⅖s.
Ojam (E.R.)	40⅘s.	1m. 12⅘s.
Anzani (Aleyon)	38⅘s.	1m. 13⅘s.
Rigal (Rigal)	41⅘s.	1m. 20⅘s.
Lamberjack (Griffon)	35⅘s.	Did not start.
Demester (Griffon)	46s.	Did not start.
Cissac (Peugeot)	30⅘s.	Did not start.
Carreau (Carreau)	Did not start.	1m. 25⅘s.

Motor-tricycles (over 50 kilos).

Tavenaux (Aleyon)	33⅘s.	1m. 8⅘s.

Voiturettes (250 to 400 kilos).

De la Touloubre (Darracq)	36⅖s.	1m. 15⅘s.
D'Hespel (Corre)	47⅘s.	1m. 38⅘s.

Light cars (400 to 650 kilos).

Hemery (Darracq)	29⅖s.	59⅘s.
Coquard (Corre)	39⅘s.	Did not start.

Heavy cars (650 to 1,000 kilos).

Baras (Darracq)	25⅘s.	52⅘s.
Dufaux (Dufaux)	30⅖s.	1m. 3⅘s.

Touring Vehicles.

Motor-bicycles.

Le Metais (N.S.U.)	1m. 16⅘s.	1m. 37s.

Motor-bicycle or Trailer.

Boissette (Boissette)	1m. 17⅘s.	2m. 23⅘s.

Cars (value less than 4,000 francs).

Seguy (Boyer)	1m. 0⅘s.	2m. 14⅘s.
Marevrelle (Crenche)	1m. 17⅘s.	2m. 2⅘s.
Bailleau (Bailleau)	1m. 12⅘s.	2m. 18s.
Gachet (Boyer)	1m. 5s.	2m. 13⅘s.

Cars (4,000 to 8,000 francs).

Gabreau (Boyer)	57⅘s.	1m. 57⅕s.
Nielsen (Boyer)	1m. 7s.	2m. 7s.
De Boisse (Denis-De Boisse)	1m. 5⅘s.	2m. 9⅘s.

Cars (8,000 to 12,000 francs).

Amand (Gardner-Serpollet)	47⅘s.	1m. 35s.
Duretuste (Boyer)	56⅖s.	2m. 0⅘s.

Cars (12,000 to 18,000 francs).

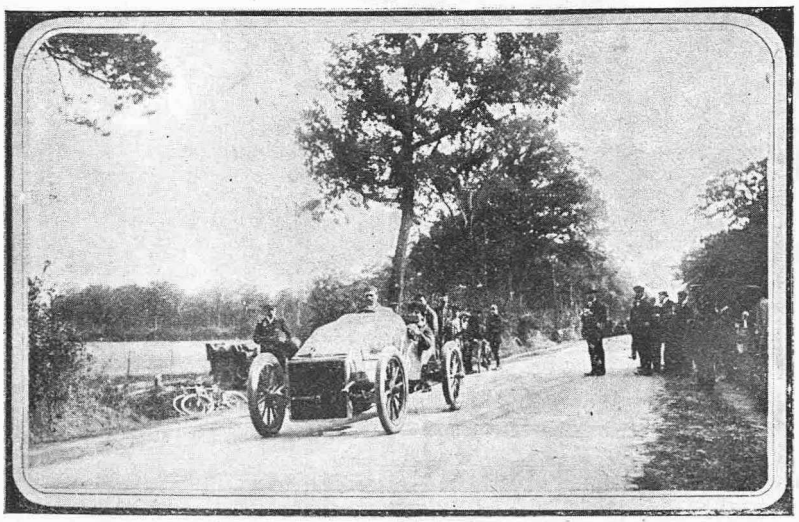
Pelser (Gardner-Serpollet)	42⅕s.	1m. 34⅘s.
H. Loste (Boyer)	59⅘s.	1m. 46⅕s.
Marnier (Radia)	1m. 9⅘s.	2m. 33⅘s.

(Car 18,000 to 24,000 francs).

Gaste (Radia)	1m. 21⅘s.	38⅘s.

Car (over 24,000 francs).

Florio (Mercedes)	1m. 16⅖s.	30⅘s.



The Dourdan Trials: Coquard on a Corre car.

The Speedwell Motor and Engineering Co., Ltd., have entered no less than 14 cars for the Blackpool speed trials. These include two 10 h.p. light Speedwell cars, two 9 h.p., four 15 h.p., and one 40-45 h.p. Gardner-Serpollet cars, four 24-28 h.p., and one 30-45 h.p. Leon Bollee cars. The company are to be congratulated on their enterprise.

NEWS.

The Riley Cycle Co., Ltd., Coventry, were ever abreast of the times. It is not surprising, therefore, that they are introducing a lightweight motor-bicycle.

Fatal Accident.

We regret to have to report a fatal motor accident in which a well-known automobilist is concerned. It happened at Anerley on Sunday at 1 p.m. Mr. F. W. Bailey, the secretary of the last motor show at the Crystal Palace, was returning home along the Elmers End Road towards Anerley, when a cyclist, Mr. Henry Norton, came out of a side turning with the intention of crossing to a side turning about 50 yards up the road. Some miscalculation or hesitation seems to have occurred, Mr. Norton eventually endeavouring to cross in front of the car, with the result that he was caught and dragged along the road. He was badly injured and died later in the afternoon. At midnight Mr. Bailey was arrested, but was later on released on bail, and appeared on Monday at the Bromley Police Court. Mr. Norton and Mr. Bailey were both old members of the Anerley Club.

100 Miles Non-stop Run for Fore-cars.

Big strides have been made this season in the development of tricycles fitted with fore-carriages. Their popularity is great just now, and the Auto-Cycle Club recognising this has decided to organise a 100 miles non-stop run on Saturday, November 5th. Starting and stopping tests on hills will be included, and all who get through will be awarded club certificates setting out the performances. The route is to be in the north of London, probably starting from Barnet, and a sub-committee is now engaged in arranging details. The event is an open one, and further particulars can be had of the Secretary, 16, Down Street, Piccadilly, W.

The Motor-bicycle "G.B."

In connection with the International motorcycle race in France, the English official representative, Mr. M. O'Gorman, has made an excellent report in writing to the Auto-Cycle Club. It will be invaluable in considering and making arrangements for next year's race. The Club feels very strongly in the matter of the wilful interference with the race, and has communicated with the other governing bodies concerned suggesting that a reward be offered to anyone giving information as will lead to the discovery of the person or persons who placed the stones and nails on the course. The A.C.C. promise to contribute £10 if the other bodies will give similar amounts.

The "Tiers de Litre" Trials in Paris.

The annual "Tiers de Litre" motor-bicycle trials began on the Parc des Princes track in Paris last Wednesday, October 5th. As the name indicates, the trials are restricted to motor vehicles of a cylinder capacity not exceeding one-third of a litre, and a weight not exceeding 75 kilos., which practically confines it to light touring machines averaging 2 h.p.—the class of machine which the French, Belgian, and German manufacturers makes a speciality of. All the well-known French firms had entered one or more of their machines; the crack types, such as Peugeot, Griffon, Alcyon, Lamaudiere, being fully represented. Belgium was also adequately represented by a team of F.N.'s. The trials are divided into several heats of 100 kilometres each, extending over five days. Reliability of running at a high speed is the principle which governs the competition; and the rules allow the same machine to be ridden by more than one rider, and the same rider to ride a different machine in each heat. For the "Reliability Cup" not more than three machines can be entered from one firm. The two winning machines in each heat are eligible to compete in the final—which is also over a distance of 100 kilometres (62 miles).

On Wednesday, the first day, heats one and two were run off, honours being divided betwen the Alcyon, Peugeot, and Griffon machines. In the first heat Anzani (Alcyon), won, doing a record of 1 hr. 17 mins. 37⅘ secs. for the 100 kilometres; Lanfranchi (Peugeot) was second, two minutes behind. Thomas, on a chain-driven Magali, was leading for three-quarters of the way, but his machine broke down at the 72nd kilometre. In the second heat Champoiseau, on a Griffon, beat Griet (Alcyon) by one minute in 1 hr. 22 mins. 39⅗ secs. Thursday's heats (Nos. 3 and 4) resulted in a triumph for the chain-driven Magali machine, and an additional victory for the Peugeot. In heat 3 Bac (Magali) was first in 1 hr. 17 mins. 49⅘ secs., with Hibon (Lurquin and Coudert) second. Heat 4 fell to Cissac (Peugeot) in 1 hr. 26 mins. 12⅘ secs.; Meline (Stimula-Vandalet) being second.

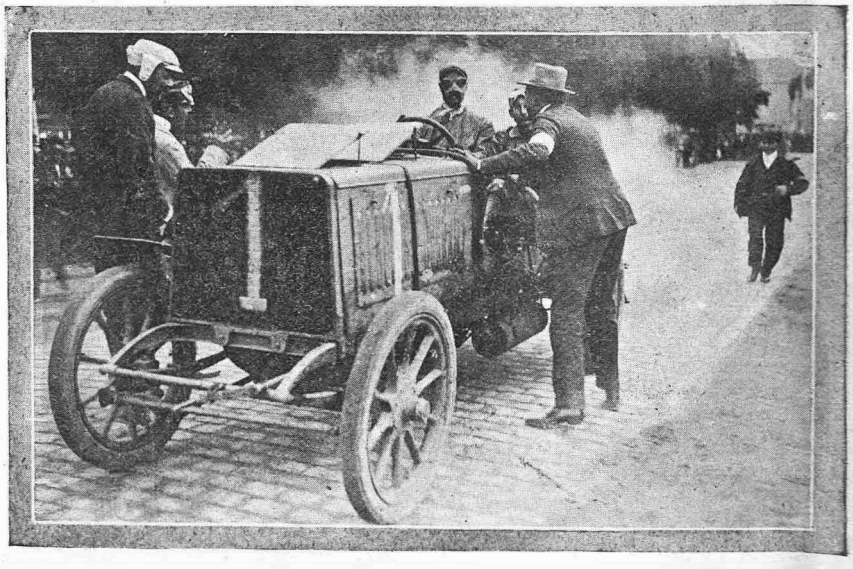
The fifth heat (Friday morning) was the occasion of a fine struggle between Giorgis, riding a Buchet, and Collomb, who steered a Magali, Giorgis winning in 1 hr. 23 mins. 30 secs. In the sixth heat an accident, which at one time looked serious, put out of the race both the leaders, Devilly and Lurquin. Luckily neither was very much hurt, but their mounts were entirely wrecked, and this gave Moreau, on a Griffon, and Cissac, on a Peugeot, an unexpected chance of qualifying. Winner's time, 1 hr. 30 mins. 34 secs.

The final heat was run off on Sunday, the result being a win for the Alcyon machine ridden by Anzani, who covered the 100 kilometres in 1 hr. 18 mins. 37 secs., the rest arriving as under:—Buchet (Giorgis), 3 laps behind; Stimula (Meline), 10 laps behind; Alcyon (Griet), 12 laps behind; Peugeot (Cissac), 13 laps behind; Griffon (Champoiseau), 13¼ laps behind; Magali (Bac), 15 laps behind; Magali (Collomb), 21 laps behind; Lurquin (Hibon), 24 laps behind; Peugeot (Lanfranchi), 25 laps behind; Griffon (Moreau), 26 laps behind; Peugeot (Yourassoff), 27 laps behind.

Evil of the Unauthorised Trial.

Mr. Archibald Ford writes as follows: "I note on my return from my non-stop trip your Leading Article under the above heading. I do not believe that the hints that you throw out are aimed at me; but other people considering that this is so, I have no alternative but to write you this letter. I have every respect for you personally, and for the conduct of your paper on the whole; but that such accusations should be made with such vagueness as to suggest to anybody that accusations of the character mentioned should be fairly levelled at me, I should not have thought possible on your part. Fearing such criticisms as have been made by you, I took the opportunity of having plenty of observers on board. During the whole of the trip I had at no time fewer than two observers, whose sole duty it was to see that the engine did not stop at any time during the entire trip. At one time I had three observers on board; these observers were changed at the proper interval, so that at no time was the car unobserved. Moreover, when, by stress of nature I had myself to have some sleep, the car was observed for the seven or eight hours of my slumber by the observer of 'Motoring Illustrated.' So far, indeed, from there being any replacements of any parts during the entire trip, I may say that not the slightest attention was given to the engine or any other part of the car beyond the necessary oiling, and at the end of the 2,000th mile an adjustment (involving five minutes' delay) of the contact screw."

[We comment on this letter editorially.



Heath, the Intrepid Panhard driver, who won the Vanderbilt Cup for France on Saturday last.

NEWS.

A Run on the Latest Pattern Rexette: By a Member of our Staff.

Learning that the Rex Co. had the first of their 1905 Rexettes finished, I accepted an invitation to have a run on it from Coventry to London. With a few odd miles put in as "an extra," this made a nice little trip of 100 miles. It was an ideal September day as I entered the train at Euston, and this being maintained, the roads were in an excellent condition for touring purposes. On my arrival at the Rex Works, Earlsdon, Mr. C. Owen, the sales manager, showed me the new features of the car, which at that moment was having the finishing touches put to it. These new features are many and are striking improvements. Firstly, the tubular frame is mounted on an entirely new system of springs, and a transverse spring under the front seat corrects the side oscillation. The driver's seat is insulated from all shocks, and it is roomy and well upholstered. The silencer is specially designed and of extra large capacity. The radiator is of a tubular type, mounted at the sides of the driver's seat. The air cooling tubes are excellently placed to catch the full force of the draught.

THE CIRCULATION IS AUTOMATIC,

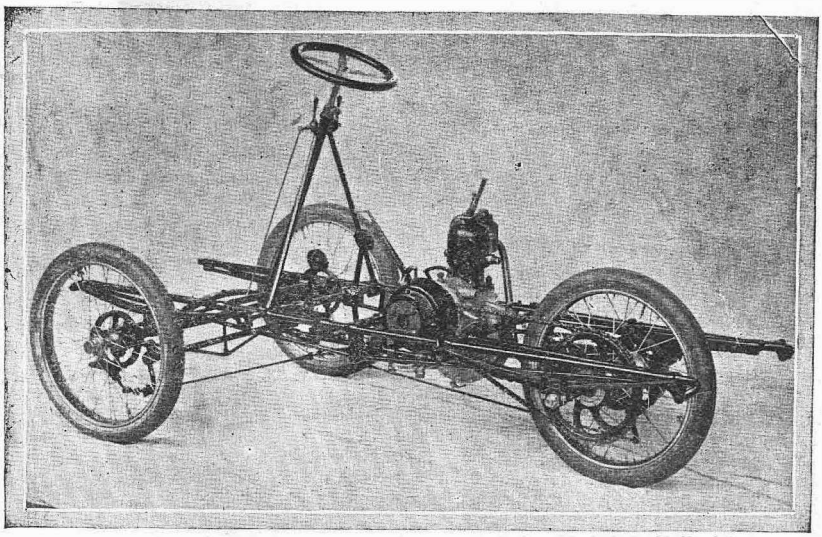
no pump being required. The front brake gear is now fitted with compensating rods instead of stranded wire cable, thus giving a much more positive and reliable action. The back wheel is arranged so that it can be quickly detached, and the mudguard is hinged, thus giving very easy access to the wheel. The body is made all in one piece, and the wheel steering gear is fitted with universal ball joints. The chain and chain wheels are fitted in a metal dust-proof case, so that the whole gear is practically weather proof. After a final look round to see all was taut and the tanks full, I got on board, Mr. H. Gray took the wheel, and we were soon spinning along the pleasant lanes which brought us into the City of Spires. As the idea was to make the run a non-stop, we had a three-quarters of an hour stop in the city for lunch, and then started on our journey. Once clear of the town we were soon on the splendidly-surfaced Coventry-London main road. With a clear run it was quite evident that the car could if required

TOUCH 30 MILES PER HOUR.

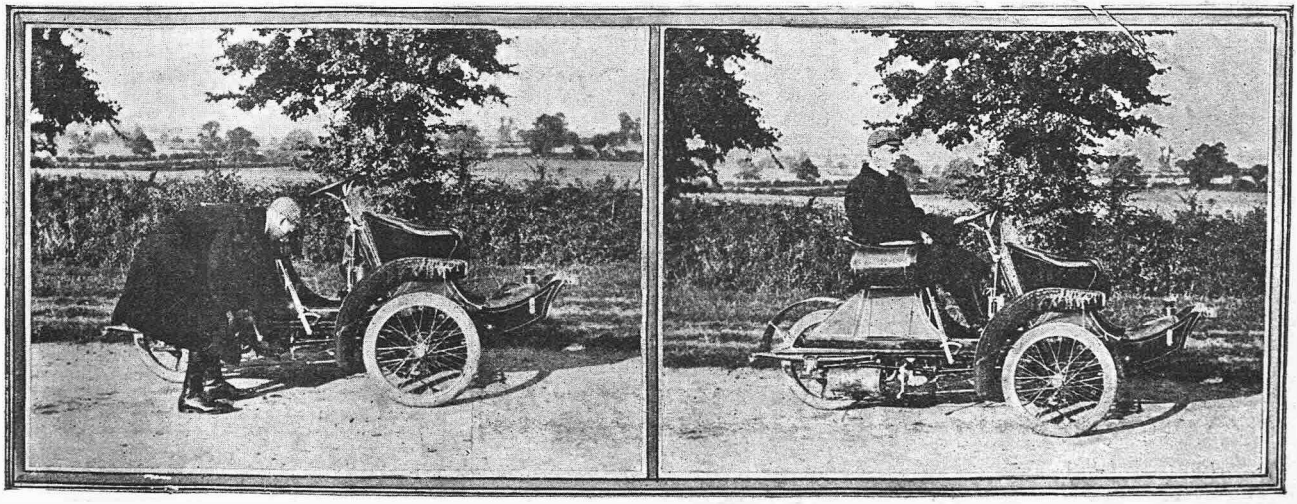
However, we did not force the pace, but kept to average riding conditions as much as possible. The hill leading out of Daventry is really a trying gradient of 1 in 10, but we rushed this to within about 50 yards of the top on the high gear: the low gear did the rest. The easy steering and vibrationless running were most marked. Through Towcester, Stony Stratford, Dunstable, we kept up a steady pace, the long grind of Brick Hill being scarcely noticeable. Through Markyate, Redbourn, St. Albans, right into Barnet we increased the pace, and passed more than one car travelling in the direction of London. It looked at one time as if we should get right into town before lighting-up time, but as the traffic began to increase after passing Finchley the pace had to be reduced, and a stop for lighting-up was necessary. There is one very good feature of the little car when running through traffic, and that is the

EASE OF MANIPULATION.

It can wind its way in and out with an ease scarcely possible with a car. Passing through Hampstead and St. John's Wood, we encountered some frightfully bad wood paving, and it was in negotiating this that the advantage of the company's new spring suspension was manifest. Before reaching the Marble Arch we got in several tight corners owing to the dense traffic, but thanks to the clutch and low gear we did not stop. We had managed the run nicely in 4¼ hours, and there was still a good supply of petrol left out of the three gallons we took on board. The radiators were only just comfortably warm—a good sign, as it showed that the engine had plenty of power for the work it was intended for. Altogether I was well pleased with my run on the new 1905 Rexette. Its lines are good and symmetrical; it runs very smoothly and comparatively noiseless as petrol driven cars go; and it is comfortable to ride in.



The New Rexette: view showing car with body removed.



The New 5 h.p. Rexette: (1) Starting the engine. (2) Waiting for our Representative.

NEWS.

Secretaries of motorcycling clubs who have not received a copy of the affiliation scheme of the Auto-Cycle Club should write at once to the Secretary, 16, Down Street, Piccadilly, London, W. It is important that all clubs should be affiliated, and have representations on the council of the ruling body of motorcycling.

We have reproduced on this page a photograph which has just been taken of Mr. and Mrs. Charles Jarrott, in a De Dion Bouton 8 h.p. Landaulet. The carriage body is fitted to the Company's standard 8 h.p. chassis, and is made long enough to provide easy side entrances direct to the back seats. As the chassis has no chains or chain wheels, it is particularly suitable for this type of body. As the illustration depicts this vehicle has a very smart appearance.

Mr. and Mrs. Charles Jarrott in an 8 h.p. De Dion Landaulet.

The Auto-Cycle Club's Consumption Trial.

The committee at its meeting on Friday last decided that, inasmuch as the small allowances which should have been made had the official car not been delayed would not have made any difference in the order, and because the trial was in the nature of an experiment and not very thoroughly supervised, the event was to stand good. Mr. Harris, who rode the 1¾ h.p. Whippet, was disqualified through not keeping up to the official pace on the outward journey. No attempt is made to discover which is relatively the most meritorious performance, the first three with the lowest consumption being awarded prizes of equal value. These are: Rose (2¼ h.p. Roc), 42 ozs., for a 70 by 76 engine, a wonderful result working out at 192 miles to the gallon on very heavy roads; Ernest Perman (2¼ h.p. Seventy), 52 ozs., and H. Martin (3 h.p. Excelsior), 60 ozs. This machine has a surface carburetter, the other two being spray. Early next year another consumption trial will be organised on altogether more scientific lines, and it is probable that a valuable trophy will be put up for this by a well-known automobilist.

It is quite likely that a big race on the road for motorcycles will be properly organised next season. The idea would be for the event to be run off when the eliminating trials for the Gordon-Bennett cars are being held. The race would be open, and no doubt create international interest.

Motoring Schools.

Our strictures on the so-called "schools" of motoring which are referred to in sundry advertisements have, as we anticipated, brought forth some correspondence from those who desire to dissociate themselves from the class of educational schemes to which our remarks had reference. Mr. A. Ford, writing from "The School of Motoring," Berry Street, Liverpool, considers our article justified. He states that at his school, for the fee of five guineas, a thorough inspection of and instruction in the mechanism of a modern motorcar, instruction in its repair on the roadside, instructions how to drive the car under all conditions, even in the heaviest traffic, tyre repairs, etc., etc., are included. Mr. Ford encloses several testimonials which speak to the excellence of the tuition given and the instruction received. The Motor Trade's Agency, Warwick Road, Kensington, W., express their pleasure that we have taken up the matter, as it is of great importance to firms that give a fair return for the money paid that those interested should know which are which. They write:—"It is no doubt known to you that our fees are more than double the figure quoted in your article, and we maintain that it is impossible to give instruction such as is necessary for the average man at less. We speak from an experience that is not new, and that has been gained after teaching a very large number of men. We put our men through a course which lasts from three weeks to three months, and in cases more. The pupils' hours are from 8.30 a.m. to 6 p.m. A pupil is in the shops at least two weeks before he drives at all, and our driving lessons are not of ten minutes' duration, etc., on a quiet road, but round, say, Windsor, Maidenhead, Reading, etc."

Birmingham M.C.'s "100."

The second round of the above competition, held on Saturday week, was concluded in fine weather. The route was as follows:—Start from the Swan at Yardley, through Coventry, Dunchurch, Daventry, and Weedon, to the Pomfret Arms, Towcester, where tanks were to be filled and tea partaken of, then returning over the same course to the Clock at Bickenhill. The following started:—W. H. Goodwin (2¼ h.p. Alldays), F. R. Gould (2¼ h.p. W. A. Lloyd's), E. H. Humphries (3 h.p. Smith's o' Saltley), C. E. Simms (2¼ h.p. Alldays), R. Tingey (3 h.p. Smith's o' Saltley), and C. G. Garrard (4 h.p. Garrard tri-car). All concluded the outgoing without trouble; and at Towcester a welcome tea was done full justice to by competitors and officials. Coming home Goodwin retired with a punctured tyre directly after starting (and as this run was taken advantage of to settle the long-drawn-out battle between Goodwin and Tingey, the latter thereby took first prize). Garrard, on the tri-car, also had tyre troubles and withdrew. The rest finished the run with no stop except for lamplighting purposes.

The automobiles attached to the Adelphi College, Brooklyn, New York. They are used exclusively for carrying the children between the school and their homes.

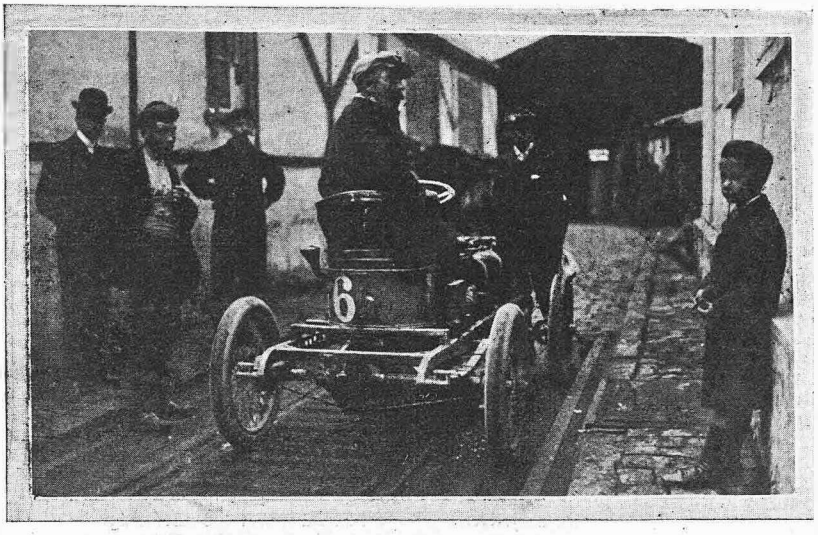
NEWS.

The action of the International Racing Committee in cancelling the decision of the stewards who annulled the motorcycle race in France is sharply criticised in Germany as prompted by Chauvinism and calculated to cause great dissatisfaction in international sporting circles.

Some very special lines in electrical accessories for motors of all descriptions are being introduced by the Bowen and O'Dery Manufacturing Co., 5, Nelson Street, Greenwich. The firm have just brought out a new catalogue, giving full details and illustrations of all their specialities. Readers interested in these goods should write for a copy. A useful line is the Standard spark-plug, guaranteed for six months, and which retails at 2s. 6d. Other specialities are small accumulator charging plant with gas engine and dynamo, accumulators, coils, testing instruments, etc., etc.

A Quaint Circular.

Professor von Herkomer, the eminent artist and art teacher, has offered a silver and enamel cup (the work of his own hands) for an international competition for touring cars. The following announcement of the event is somewhat quaintly worded:—"The prize cannot be competed for more than five times. Those winners who lose the prize again are going to receive special prizes, so for instance has been offered already a special prize for the winner of 1905 by Dr. Magin, of Paris, worth M. 2,000. The first competition will take place in Munich. During the meeting at Landsberg Professor von Herkomer has promised to paint each winner in the Herkomer competition for touring cars. A portrait of this artist being payed with M. 20—40,000, his offer will surely prove a great incitement for the gentlemen-drivers to compete in this race. Reglements shall be published in due course of time."



Touloubre on the light Darracq which competed in the Dourdan speed trials. For this event it was fitted with a single seated body.

What Should Solomon Do?

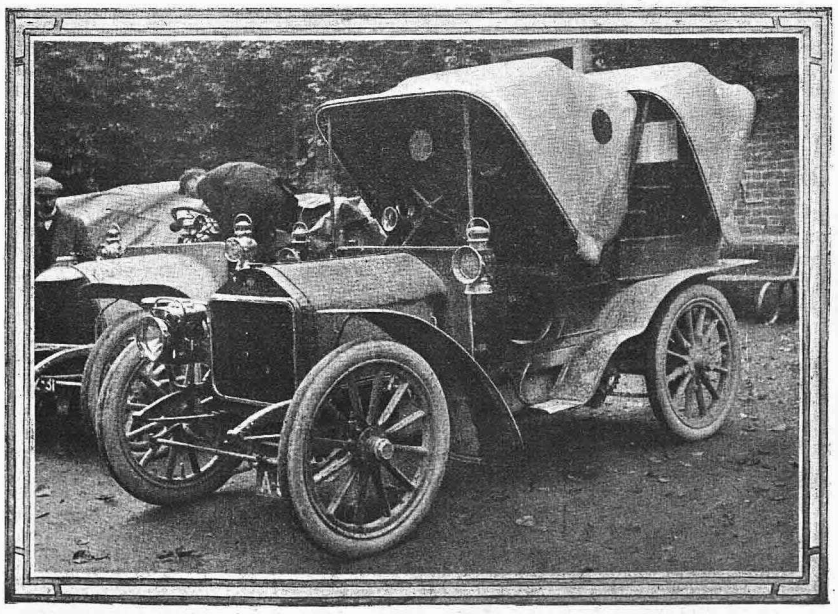
This problem from Yankee-land, according to the "Mail," is engrossing the attention of every motorist in the kingdom. Merely expressing a polite doubt as to this, we pass on to the problem. "Solomon, with his newly-made bride, is motoring down a precipitous hill, when the chain (sic!) breaks, and the emergency brake (sic! again) fails to act. Solomon can steer the car, but cannot stop it. Turning sharp corner he meets a carriage containing two old people. Between the carriage and the wall are a nursemaid and child, and on the other side is a precipice. *What should Solomon do?*" To our mind, there is no doubt. For the sake of the community, Solomon would be well advised to go over the precipice. Such a lunatic should not be left at large. Possibly there are some who will not accept this view.

Forthcoming Automobile Salon in New York.

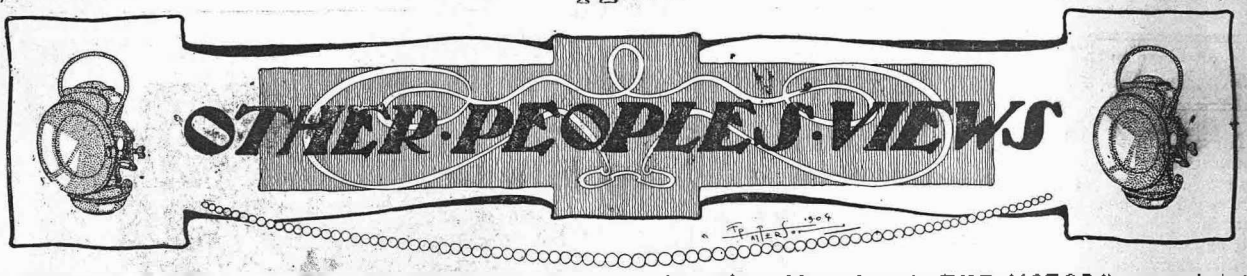
A foreign car exhibition will be held in New York from January 11th to 24th next. French, Italian, German, and English cars will be shown, and an endeavour will be made to rival the famous Paris Salon in point of artistic merit. The usual exhibition of American cars will be held simultaneously in Madison Square Garden —the foreign exhibition being located in Herald Square Hall. Models of the following makes have already been promised:—Mercédès, Panhard, Darracq, Richard-Brasier, Renault, Rochet-Schneider, Napier, Decauville, Fiat, Clement-Bayard, and Vinot. Already considerable interest is being evinced in the event.

"Nothing New," etc.

In the course of a humorous article on "Motor 'Buses for London," the "Daily Telegraph" points out that the motor 'bus is far from being a new vehicle. As long ago as 1836 five steam 'buses ran between Stratford, Paddington, and Islington, carrying an aggregate of 12,700 passengers, and covering a mileage of over 4,000. "Nothing further happened," says the "Daily Telegraph," "until, about four or five years ago, a company ran a 'bus from Kennington Gate to Victoria. It was a convenient 'bus, because, if it was not at the point where you expected it you walked on and caught it at the next breakdown. When it ran, the din rivalled a boiler plate factory; when it was not running a man was lying underneath it doing repairs. Taken altogether, it cannot be claimed to have greatly contributed to the solution of the traffic problem. Another motor 'bus company was wiser, for it restricted its vehicles to pictures on its prospectus, where they looked nice and noiseless, and irritated nobody but the shareholders. But now the practicable motor 'bus has been reached. They have been running with fair success for a year or more in various parts of the country, and much has been learnt during the past twelve months, until it can now be asserted with reasonable confidence that a reliable and profitable service can be established."



The new 18 h.p. Siddeley car, fitted with an improved double hood



NOTE.—These columns are set apart for the discussion of motor topics by bona fide readers of "THE MOTOR," and trade letters containing veiled advertisements are not admitted. The Editor is not responsible for opinions expressed by correspondents in this section.

Magneto Ignition.

Sir,—As I see in your description of the light motor-bicycle, which you have had built, that you are going to experiment with a light magneto, may I draw your attention to the magneto made by the Progress Company, of Charlottenburg, Germany, which is by far the lightest I know? I have had one in use for about 18 months and it is wholly satisfactory.—Yours faithfully, H. E. Colvile, Maj.-Gen.

For Cleaning.

Sir,—Have any of your readers tried the virtues of "Sapon?" I find it quite the best thing I have ever come across for cleaning the hands, or, in fact, anything. My hands used to be my despair when first I started motoring, but since using Sapon that is a thing of the past. This preparation is a sort of soapy powder used, I believe, in the laundry. I, of course, am not interested in any way in its sale, but like to let my fellow-motorists know of a good thing.—Yours faithfully, "Clean and Contented."

Belt for Tri-Car.

Sir,—I have just read "Forfex's" letter in a recent issue of "The Motor." I feel sorry indeed for him. I had the same experience the first season I drove a tri-car. I can assure him, however, if he will write to the Lycett Belt Company and ask for their special tri-car belt, he will find it thoroughly reliable. I am now riding a Quadrant 5½ h.p. tri-car, and, as you know, there are two short belts. The set I am now running has carried me upwards of 600 miles, and I have had no occasion to shorten them at all, and they have shown no sign of stretching. The long belt has now run upwards of a 1,000 miles and there is no sign of wear.—Yours faithfully, Walter Hatter.

Hereford Light Car Trials.

Sir,—Many of our customers have called our attention to the table in the judge's report, which shows the petrol consumption of the new 7½ h.p. double-cylinder Humberette to be 16.9 miles to the gallon. This is very misleading. The apparent very heavy consumption was brought about by a leakage on one of the runs, caused by the petrol pipe union coming loose from the tank, whereby at least six gallons of petrol was lost on this run. Moreover, each car was debited with every tin of petrol obtained from the stores, whether used or not, and this would account for at least another five or six gallons. Since the trials a test has been made on the car which competed, and we find it will accomplish over 50 miles on a two-gallon tin of Pratt's "A" petrol. We trust you will insert this explanation, as it will save us considerable correspondence on the subject.—Yours faithfully,

Humber, Limited.

Hereford Light Car Trials.

Sir,—Seeing your advice in "The Motor" recently as to sending to the Automobile Club for the judge's report re the recent Light Car Trials, I sent for it, and must say your advice was most excellent. As probably the notice may have escaped the eyes of many of your readers, who are thinking of speculating in a car, I am wondering whether you could insert the notice again. I mentioned the report to a couple of my friends the other night who are very much interested, but they said they had overlooked the paragraph. They, however, sent for it at once after reading it.—Yours faithfully, Norman Macintosh.

The Zedel Engine.

Sir,—In a recent issue of "The Motor," a correspondent asks for readers' experiences with the Zedel engine. Please allow me to briefly chronicle mine. My motorcycle is a Star, fitted with this make of engine, rated at 3 h.p. I ran the engine for over three thousand miles with extreme satisfaction. It was reliable, full of life and power, and could hold its own with any motorcycle I met on the road. Then I noticed that the bearings were loose, and although the motor still ran well, I did not like to run it with loose bushes. I therefore sent it to the Star Co., who promptly returned it with new bushes and everything in first-class order. It is now running better than ever, but at the same time I think it is unusual for an engine to wear its bearings in so short a time, especially as I always used it very carefully, and paid careful attention to lubrication. I think it is only fair to mention that the Star Cycle Co. have behaved very courteously since I purchased the machine, immediately replacing anything that I considered in the least defective. I have no interest in the above-mentioned firm, but as I consider it to be a point of considerable importance to the purchaser, I have taken the liberty of drawing attention to it.—Yours faithfully, T.R.

Revenue Tax on Cycle Couplers.

Sir,—It would be well for those contemplating the purchase of a cycle coupler to know that this means a two-guinea tax, as the Inland Revenue hold that, although the coupler does not turn the motor into a motorcar, it makes it into a four-wheeled vehicle, and therefore liable to the tax applicable to same. I have got to pay the full tax to prevent them taking action against me, as they won't even accept the extra 15s. trailer tax.—Yours faithfully, "Taxed."

The De Dion Fibre Clutch.

Sir,—Noticing a letter from "A.R.H." in a recent issue of "The Motor," on De Dion clutches, may I ask him if he has refilled the clutch box with oil after putting together. Want of oil would have just the effect he mentions, as the expanding segments being covered with hard fibre needs a lot of lubrication, otherwise the fibre swells and would become "flaked." I have handled De Dion pulleys frequently, but do not remember a similar case, but as I know a lot of people think they should keep oil right away from fibre, which is a mistake, the reminder may be of service.—Yours faithfully,

J. Witham.

The Price of a Light Car.

Sir,—I was glad to read your timely protest against Mr. Edge's view that £200 is the lowest price at which one can obtain a reliable light car. This statement, in view of the recent trials, is really ridiculous. I must add, however, that even in the case of light cars sold here at £200 it is often the inflated charges of agents, and not the cost of production, that render such a disbursement necessary. Take the admirable De Dion two-seater. Mine cost me in England over £200 (net) for the bare car, and with tools and all fitments ready for the road over £220. In Paris I can buy the same car for 4,300 francs, or, say £172, with perhaps a discount for cash. In view of the low cost of carriage, the difference charged to us here seems preposterous.

Another point worth notice is the cost of a Michelin (extra-fort) cover 800 × 75 mm. This costs me £6 at the car agents here, and only 102 francs, or, say £4 in France. A royalty has to be considered in this case, but does it account for the big difference?

Of course one can bring one's own car across the water, and now that spare parts and repairers are easily found this remedy will become popular if the high prices continue to rule. The public should know that this "minimum price" of £200 is determined solely by the excessive charges of middlemen. The popularisation of the light car will not be furthered by persistence in such a policy. "Motorist."

O.P.U.

Escape of Oil from Crank-case.

Sir,—Would any readers of "THE MOTOR" kindly suggest an efficient remedy for above trouble? I have a 2¾ h.p. motor-bicycle, and do what I may I can't prevent an excessive quantity of oil being forced out from the pulley shaft splashing in all directions—mudguards, pedals, etc., throwing it all over the side of crank-case and running down in streams. This has the effect not only of causing an unsightly appearance, soiling the rider's clothing, but also preventing sufficient lubrication to the cylinder. I use very heavy oil of good viscosity, giving a charge every 12 miles, but more has to be given owing to this waste to prevent the piston seizing.—Yours faithfully,

T.F.

Hill Climbing with Small Engines.

Sir,—I note from Mr. E. J. Tiffin's statement that he has ridden a hill 1,400 yards long, averaging 1 in 7 to 1 in 8, by means of a 2½ h.p. motorcycle. I have had a very wide experience with motorcycles and have ridden upwards of 25,000

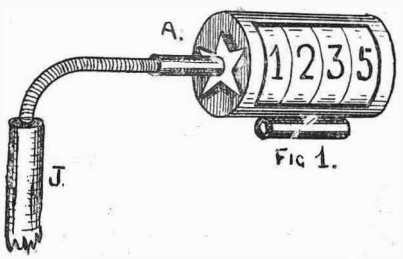


FIG 1.

Illustrating letter from C. Roberts.

miles. I have never seen a 2½ h.p. motorcycle that would take an average weight rider up such a hill. It would be interesting if some of the gentlemen who have taken part in reliability tests would give us their experience, because there is a vast difference between a checked and an unchecked ride.—Yours faithfully,

M.I.MECH.E.

Sir,—I have read with much interest the articles from Mr. Burley and "BY103" in a recent issue of "THE MOTOR," and am sure that these gentlemen must possess exceptional machines. Perhaps "BY103" will kindly inform us what gear he uses on his Clement machine to enable him to run at 25-30 miles per hour "with the throttle nearly closed," and yet climb hills of 1 in 12 at 10-12 miles per hour without pedalling. I cannot get equal results with a well-known machine of 3 h.p. With reference to Mr. Burley's letter, I have found from experience that nothing under 3 h.p. will give satisfactory results with a fore-car, if the engine is air-cooled, and a 2½ h.p. engine that will do this, besides "towing two or three on the level," must be a marvel of engineering on the part of the makers of the Kerry, and reflects great credit on the driving of Mr. Burley. Perhaps your correspondent will give us the length and steepness of gradients, etc., etc., as mentioned in your footnote.—Yours faithfully,

W. F. TAYLOR.

A Reply.

Sir,—In reply to F. Ashley writing in "O.P.V.," the manufacturers of the Barter engine are Humpage Jacques and Pedersen, Luckwell Lane, Ashton Gate, Bristol. Also in reply to "A.H.R.," does he fill his De Dion clutches with Stauffer grease? They should be full up with it, clutches will then slip for a mile till the gears are warm, and after that will work perfectly all day, presuming that clutches are properly in adjustment. A small amount of drive when back wheels are jacked is to be expected and is right enough.—Yours faithfully,

A. LUDLOW CLAYDEN.

The Light Motor-bicycle.

Sir,—I am an advocate of a machine of not less than 3 h.p. It should have a spring frame, no pedals, V belt, and clutch. I believe in the machine being made as light as practicably consistent with strength. I do not consider 2 h.p. enough, because it will not take a trailer, fore, or side-car. I am distinctly in favour of foot-rests in place of pedals. The position is more comfortable in the event of a skid. There are no cranks to get bent; there is no chain or free-wheel to clog with mud, etc.—Yours faithfully,

A. THORN.

Sir,—I was greatly interested in the letters re light motors which have appeared, as I am using a Clement 1¾ h.p., which I got in place of a 2¾ h.p. machine. It has given me great satisfaction, and I have yet to meet the hill I cannot ride up with pedal help, and it is very fast on the level. I for one never intend to go back to the heavy machine. My reason for writing is to warn your readers who use the same type of machine. As doubtless they are aware, the spark can be inspected across the head of the engine by opening a port fitted for the purpose, and also for injecting paraffin when starting. I injected some paraffin, but failed to start, and, wishing first to see if the spark was right, I placed my eye to the port and tipped the contact blade. The charge of paraffin exploded, and, striking my eye, I got a severe burn. Hoping this warning will be of value of your readers.—Yours faithfully,

R.I.237.

Gudgeon Pin Screws, Light-weight Motors, etc.

Sir,—In answer to Mr. G. Varney's query of the 17th ult. in "O.P.V.," I may tell him that the Clement-Garrard engines have no gudgeon screws, or, in fact, any screws at all inside cylinders or crank cases; a piston ring keeps the gudgeon pin in position. Regarding trembler coils and wipe contacts on high-speed engines, I find that the Maxfield make and break will work perfectly up to 3,000 revs. per minute; what more is wanted? Respecting light motorcycles, in my opinion a multi, not two-speed, gear and chain drive is a sine qua non if satisfactory results are expected. My 2 h.p. engine will take me (13 stone) 30 miles per hour, or up 1 in 9 (measured, not estimated) without help, or, again, it will pull a trailer and a 11½-stone passenger over any ordinary road at 16-20 miles per hour without help, but, and this is a rather large "but," the engine must be geared to suit the work in hand, of which more anon.—Yours faithfully,

"MOTO CYCLO."

[A number of letters dealing with the weight question are held over.—ED.]

Starting the Humber Motorcycle.

Sir,—Respecting the difficulty in starting the Humber cycle with free engine, I quite agree with Mr. Lloyd's letter in your Sept. 27th issue, and have done the same on my Humber for some time; but why not open the exhaust at the top of the hill instead of near the bottom; this would very effectively cool the engine by allowing the hot gases to escape whilst descending the hill.—Yours faithfully,

V.F.G.

A Dashboard Cyclometer for a Car.

Sir,—Having driven a Humber car for many thousands of miles, I thought it would be nice to know the exact distance travelled in the future, and to be able to see at a glance how far I had gone, and when it was time to oil up, etc. I contrived the following method, which may be of interest to your readers, as it seems to work admirably. An ordinary cyclometer is fixed to some suitable place on the dashboard, the only alteration necessary being a small piece of tube, about 1 in. long (A, Fig. 1) soldered on to the star wheel. This tube is just large enough to admit the flexible cable, which consists of the outer casing of a Bowden wire stripped of its covering. A small contrivance (Fig. 2) is attached to the other end of the flexible cable to give the necessary motion to the latter by means of a pin attached to the spokes of one of the wheels. A piece of sheet iron bent at right angles (B, Fig. 2) with a hole (C) is made capable of being clamped on to the front axle of the car, so that the star wheel (D) lies close to the inner spokes of the wheel. On to the upper portion of the angular piece of iron is screwed a ⅜ in. tee gas junction. On each side of the tee piece a washer is soldered, and right through both washers a piece of brass tube is fixed of sufficient size to take a piece of ⅛ in. spoke wire. This wire is tapped at each end, and has fixed on one end a star wheel (D) similar to the one on the cyclometer, and at the

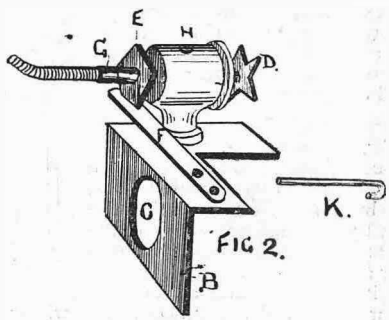


FIG 2.

Illustrating letter from C. Roberts.

other end a disc with the same number of flats (E), which work on the spring (F). To the disc (E) is fastened a tube (G), similar to the one on the cyclometer. An oil hole is made in the tee piece at (H). By encasing the cable in ¼ in. brass tubing (J), the motion can be conveyed to any convenient spot, but it is necessary to have about a foot near the wheel bare on account of the movement when steering. To actuate the star wheel, it is only necessary to have a short length of spoke wire (K) with a crook at one end, which passes through the spokes on the wheel, and is bound on with thin copper wire.—Yours faithfully,

GEORGE ROBERTS.

B 23

O.P.U.

Air-cooling Device.

Sir,—The accompanying sketch of an air-cooling device for cycle and light car engines I have patented may interest your readers. It will be seen that the casing of the fan forms with the longitudinal radiators a number of channels through which the fan forces the air, thus practically forming a honeycomb radiator round the cylinder.—Yours faithfully,

A. P. BECKETT,

4, Rock Road, Maidstone.

Compression Puzzle.

Sir,—I am puzzling myself over the same thing as "Compression" writes about—good compression on turning the pulley the reverse way to which it runs. I think it is due to the piston being tapered to a very slight extent, or more likely bad lubrication, or even sticking rings. I have tried thicker oil and sundry things without good results. I don't think it can be caused by leak in the combustion head or valves, because the compression is very strong the reverse way. I, too, would be glad to know the cause if any readers have suggestions to offer.—Yours faithfully,

W. HEBDEN.

The Meredith Fan.

Sir,—May I inform fellow riders that I have found the Meredith Fan you described recently in "THE MOTOR" a very satisfactory device? I fitted one to my fore-car — originally a Bat 2¾ h.p. machine. With a 10-stone passenger in the fore-car, I ran from Leeds to Scarboro' non-stop the first time I tried the fan. This, I think you will agree, is not bad for a 2¾ h.p. engine. I used only two-thirds of a gallon of petrol in 63 miles. May I also express my appreciation of the valuable technical advice I have found from time to time in your pages.—Yours faithfully, A. MAUDE.

The Side Car.

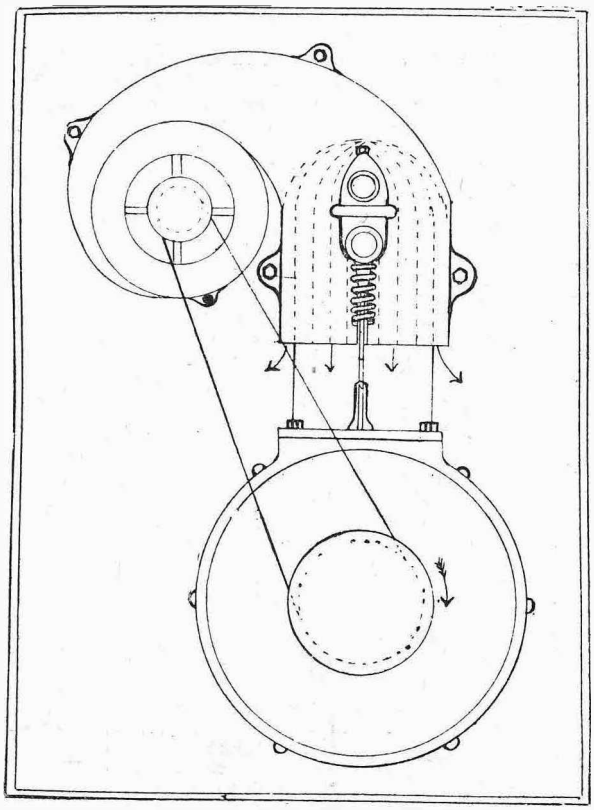
Sir,—I notice in recent correspondence regarding side-cars, that a great point in their favour has not yet been mentioned—namely, the fact that a large proportion of the passenger's weight is carried by the driven wheel, giving it that essential driving grip in which all fore-cars are more or less deficient. During last winter, when riding with side-car, the driving wheel never appreciably slipped, and the wear on tyre tread after 2,000 miles was scarcely perceptible; my average distance per tread with fore-car or trailer was about 800 miles, owing to grinding action on road surface. Apart from tyre wear, the weight on rear wheel renders the jolting to driver far less than on fore-car. The chief point, however, is the fact that with a rigid side-car side-slip was unknown, even if both cycle wheels were locked on grease, the free-running wheel of side-car maintained a straight line of progression. In this respect the side-car seems to have an advantage over any other form of motor vehicle, car or cycle, especially on tram-lined roads.—Yours faithfully,

FRED. A. JOHNS.

Six Volts for Good Ignition.

Sir,—I was talking the other day to a gentleman who has had a large and unique experience with all kinds of cars, and quite recently he lent, for the military manœuvres, five cars of various makes. He informed me that on all his cars he uses six volts for the ignition, and although put to severe tests in the manœuvres, he never had one stop. It very often happens that he purchases a car, and after "taking down" and thoroughly overhauling he applies a battery giving six volts, and the car goes better than ever. Of course, with six volts (which, by the way, soon gets below six volts), and provided the plug wires are not too far apart, we get an intensely hot spark, which practically has the effect, so far as quick firing is concerned, of advanced sparking. As most coils, especially De Dion, Darracq, Panhards, and non-trembler coils generally, will stand a nominal six-volt current, I see no danger in using it; but I must point out that it is most important to see that the insulation is perfect. Perhaps some of our friends who have cars that are hard to start will try six volts, and, by the way, it is as well to mention that they can with six volts flood the carburetter and open the compression tap and the mixture will, when right in the cylinder, instantly fire. I would also like to point out that some of the leading lights in the industry have written reams of MSS. on their pet theories and practices, and they have had, in the light of experiment and practical work, to take it all back, and it is just possible that we have got so used to four volts that we are in a rut.—Yours faithfully,

J. MOSS MORGAN, B.Sc.



Illustrating letter from A. P. Beckett.

The C.-G. Carburetter.

Sir,—In reply to "Bodleian" (Oxford), I had the same trouble last season with a Clement-Garrard carburetter. — Cause, lower edge of air-slide begins to cut off petrol, when air inlet is open about 1-16th in. Remedy, take off heating tube from silencer to carburetter; draw out heating tube in carburetter; take out screw (shown on p. 139 "THE MOTOR"); take off union to inlet tube; disconnect rods to adjusting levers; then draw out the T piece on top of jet chamber; move air inlet slide so that it just covers additional air inlet and scribe a circle round edge of air hole, showing part of slide which is required to cover air hole; then look through lower limb of T piece—where petrol jet shoots up—and turn air slide till circle scribed comes in view. Turn back a little so that enough is left of air slide to cover air (additional) inlet. Scribe round edge of lower limb of T inside, marking a semi-circle or thereabouts on the air slide. This should be at least 1-16ths. in. from circle first scribed. Then file away semi-circle, making semi-circular notch in lower edge of additional air slide; this will allow air hole to be open more than half, before the lower edge of air slide begins to cut off petrol from jet.

I could, at first, only open the air hole about 1-16th in. to 3 32nd in. before making the alteration; now I can get it open nearly 3 8th in. in dry warm weather.—Yours faithfully, "HANTS PARSON."

The Rule of the Road.

Sir,—The recent smashing up of a motorcar by being wedged between two electric tram-cars again calls attention to the growing neglect of the ordinary rules of the road, either through carelessness or ignorance. With regard to passing tram-cars, there is only one side on which to pass a tram, and that is on the inside. The tram rails are laid in the centre of the road solely with the intention of allowing a convenient space on the near sides of the road for other traffic. It would be very awkward if the lines were laid on the extreme near sides of the road, leaving the centre of the road clear for other traffic. I would ask how would traffic taken into side thoroughfares or driven from such into tram-lined roads fare? The trams, running on rails which are laid in the centre of the road, cannot deviate from their course, and in the case of a vehicle overtaking a tram the only safe and logical course for it is to pass the tram on the inside. Should the vehicle attempt to pass on the off side, it is immediately confronted by the traffic coming in the opposite direction, and is on its wrong side immediately it goes over beyond the centre of the road. In the event of such a vehicle running into, or being run into by another vehicle, it is entirely to blame, being the cause of the accident through being on its wrong side of the road. In the case of roads having electric standards in the centre, the danger is greatly multiplied. I write this in the interests of road-users generally, as I observe that cyclists, besides motorists, are very great sinners in this respect.—Yours faithfully,

"MOTORCYCLIST."

O.P.U.

The Gudgeon Screw.

Sir,—Answering Mr. G. Varney's enquiry re "Engines made without gudgeon pin set screws," the Kelecom's of this year's pattern have the lowest piston-ring fitted through slots at ends of gudgeon pin, dispensing altogether with screws and split-pins. My experience of about 4,000 miles, to date, on a Kelecom engine of 3 h.p. goes to show that the method adopted is perfectly satisfactory, and relieves the rider of all anxiety on this score.—Yours faithfully,

EDWD. L. GARDNER.

Sir,—I have been interested to read the various letters lately appearing in your paper relating to gudgeon pin set screws falling in. I had an experience recently which I do not want repeated. I was just leaving Whitchurch when my engine, a 3 h.p. one, suddenly made an uncommon noise. I pulled up as quickly as possible, but before I could stop, the engine had jammed and the belt slipped on the pulley. On removing cylinder I found one of the gudgeon pin set screws wedged between piston rod and one of the sides of the crank-case and quite immovable. I had to loosen the two top bolts of crank-case to get it out. The other set screw I found almost out, too. It seems as if motor-cycle makers pay little attention to these details, although they are details that might do incalculable damage.—Yours faithfully, K544.

Sir,—I have read a lot in the papers about the gudgeon pin set screws coming out and causing trouble, and only the other day a friend of mine had a smash from the same cause. One of your subscribers, I notice, wishes to know of an engine without set screws for gudgeon pin. I may say I bought a 1¾ h.p. cycle from the Coventry Eagle Cycle Co., Coventry, in April, 1902, the gudgeon pin of which is slightly taper and then driven home, and no screws used at all. The machine has done, now 8,400 miles, and I have had no reason to wish for set pins. The gudgeon pin has only been out twice, once when I knocked it out to see how it was held in, and once when my cycle repairer knocked it out to put in a new brass. There seems to be another peculiar point about this engine. It did 8,000 miles without it being necessary to inject petrol into cylinder to make starting easy. Quite lately I had to inject petrol to make it move at all, but the cause is want of oil, caused through the oil blowing out through the bearings, which are very badly worn and are to be replaced when I can spare the machine. I am never troubled with overheating (when the bearings are in order), as I always make a point of giving a charge of oil every 20 to 25 miles, and if the machine has only run three miles when I get home, I always empty out oil and put in fresh charge. I use up the waste oil by mixing it with the new. I may say that the ends of the gudgeon pin are not covered by a ring. It seems to me that the method I have mentioned is about as simple as could be wished for, and I am surprised it is not generally adopted.—Yours faithfully,

ALFRED MEIGH.

The Pedalling Gear Chain.

Sir,—I should be much obliged if you would insert this in your paper as a warning to others. Although I looked after the chain on my ordinary bicycle very carefully, I have given the pedalling gear on my motor-bicycle little or no attention, thinking it of no consequence. The result was that on a recent occasion, when travelling at a good pace down hill, the chain mounted one of the cogs on the back wheel, snapped, and coiled round the back gear wheel, jambing the back wheel almost instantly. If the road had been the least greasy, this would have resulted in a bad accident, but fortunately the damages were only a broken free-wheel, bent spokes, and some rubber torn off the tyre, and none to myself. In future I shall give the pedalling gear its share of attention.—Yours faithfully,

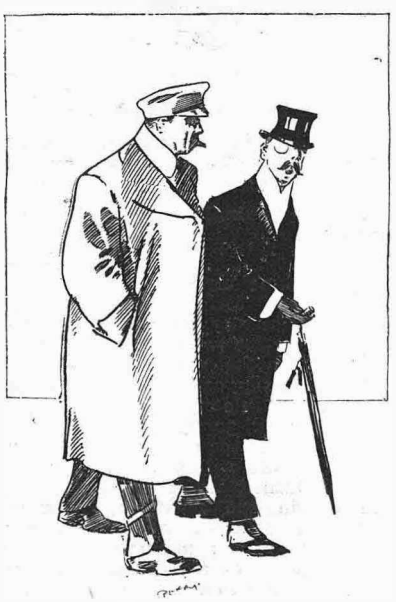
"M488."

Tri-cars and their Engine Power.

Sir,—The question of what should be the minimum engine power for work on tri-cars is one I should certainly like to see settled by the committee of the Auto-Cycle Club, and I have written the chairman a letter with a view of seeing if it is possible for the Club to organise, at a convenient date, extended trials exclusively for this class of vehicle, which is making such wonderful strides towards perfection. The question of the reliability of the big car is now undisputed. Everyone knows that the 15-40 h.p. car will go anywhere, and do any work which is imposed upon it, provided it is carefully looked after. The refining process has assuredly done its work well. Now the small car is on its trial, and it may be a matter of a year or two ere the officials of the Automobile Club are quite satisfied with its all-round merits to seal it as a vehicle which has successfully passed through all the probationary stages of criticism and refinement. The tri-car to-day is in exactly the same position as the small car was two or three years ago. At that time the public was quite ignorant as to the power necessary to drive successfully a small car over give-and-take roads, and we find the same variety of engine power in that period, i.e., 3, 3½, 4, and 5 h.p., as we find in the tri-car to-day. And, even at the Agricultural Hall last year, I noticed several small cars of 3½ and 4½ h.p. (air-cooled). It is now, I think, admitted by the trade, and it is certainly fairly well known to the man in the street, that the minimum engine power for a two-seated car should not be less than 6 h.p., and this is now accepted as a standard. What is to be the generally accepted power of the tri-car engine? At the present moment only those who have had practical experience of them can tell what their capabilities are. Intending purchasers are told that a certain 3 or 3½ h.p. machine will climb any hill, when they will do nothing of the sort. The best 2¾ h.p. engine on the market is unequal for hill work; 3½ or 3¾ will not climb hills unless they are rushed, and it is not well to do this. 4 h.p. is good, but is it enough? 4½-5½? Should these be the standard engines for all-round work? In order to determine these points the Auto-Cycle Club would be rendering a public service were they to organise comparative trials, exclusively for tri-cars, and for them to fix or recommend what they consider the necessary engine power for the work—having regard for machines with single speed and machines with two-speed gear. I append herein some suggestions which I have ventured to submit to the Club for perusal, and, I hope, consideration. I feel confident if the trade were approached in this matter the response would be loyal. Take the Riley tri-car, for instance, whose latest model is a 4½ h.p. water-cooled engine, and two-speed gear; also the Lagonda, with a 5 h.p. engine and two-speed gear, and the Garrard 5 h.p. three-speed gear. If these well-known firms are convinced of the necessity of increased power, it can have little room for doubt in the lay mind. In the meantime, it would be very interesting to hear what Mr. H. B. Davies, Mr. Wilbur Gunn, and Mr. Tuchmann could tell us about it, not forgetting Mr. Hooydonk. I propose that trials for tri-cars should be held on a convenient date to ascertain:—

1. What the engine power should be—
   (a) With single drive;
   (b) With two-speed gear.
2. To report and recommend the adoption by manufacturers of a standard minimum engine power—
   (a) With single drive;
   (b) With two-speed gear.
3. That all engines be tested on the basis of a minimum weight for two-speed gear—
   (a) Of machine 300 lb.;
   (b) Of two passengers 12 stone each.
4. For single drive—
   (a) Of machine 350 lb.;
   (b) Of two passengers 12 stone each.
5. To report which is the simplest and best all-round system, air or water-cooling.
6. That all hills should be climbed leisurely.
7. That the trials be via Kingston, Portsmouth, Brighton, Lewes, London, and no pedalling be allowed.

—Yours faithfully, OWEN JOSEPH.



QUEER CRAFT.

"As enthusiastic as ever?"

"Decidedly more so! Next season I shall set up an oil boat, gas yacht, or petrol punt."

O.P.U.

The Price of Tri-cars.

Sir,—May I draw attention to what I feel sure is a growing want amongst motor-cyclists, viz., the need of a reliable tri-car at a reasonable price? To be able to take a companion on one's journeys is what every motor-bicyclist must have felt to be desirable, and the various expedients to this end are, I think, more or less makeshift and unsatisfactory. The fore-carriage is, so far, the best thing on the market, but then the price is prohibitive to the majority, and approaches so nearly to that of the small car that anyone contemplating the purchase of a tri-car would probably obtain better value and greater comfort by deciding on the car. To many, who cannot afford the upkeep of a car, the tri-car offers possibilities to the motorist of limited means. But it should be cheaper than it is, and also lighter; and I am one of many prospective motorists who is waiting for this very desirable consummation.—Yours faithfully,

TRI-CAR.

Capacity of Accumulators.

Sir,—In reply to "Dublinite's" letter in your issue of September 13th, I should like to point out one or two similar things that strike me at the outset. He appears to have missed out the Lithanode cell in his careful experiments on the capacity of the best known makers of accumulators.

His method of testing for capacity is perhaps as good as any, but his description is extremely vague. Did he, for instance, discharge all the cells from the same lamp, or were different lamps used in each case? Was an amperemeter used in conjunction with the lamps, or did he take it for granted that the lamp or lamps took 1 amp. as per the makers' catalogue, for I have known these lamps vary 10 per cent. in their consumption? It was quite unnecessary to add acid to the cells to raise their specific gravity after discharge. The same acid will increase in specific gravity as the capacity of the cell increases during charge until it reaches 1.220—quite strong enough for the purpose. Acid added to cell anyhow is a very bad policy, as it will never mix with the acid already in the cell. It either floats on top or settles down to the bottom, as the case may be. To strengthen the acid of accumulators it is necessary to tip it all out into a basin and slowly add the fresh, stirring meanwhile. The acid then mixes equally together during the stirring. It is an extremely curious coincidence that six accumulators of different make should all run 18 hours, no more and no less, down to a voltage of 3.7, and I congratulate your correspondent on getting together such excellently uniform examples of modern ignition cells.

I notice he says there was very little difference between the Pfluger and the Castle cells; and for that reason the Castle gave the better performance, inasmuch as the Pfluger had solidified acid and the Castle liquid, doctored to start with by your correspondent with the probability that the contraction and expansion of paste was not even and distributed all over the plates. It is well known that the discharge of solidified cells is not so rapid as liquid, in fact it is 25 per cent. less—and it stands to reason that it must be so as the gases cannot escape so quickly through the semi-solid acid as through the liquid—and I should have thought your correspondent would have noticed the difference in the glow of the lamps, or if he had an amperemeter it would have shown a reduction of quarter of an ampere. In any case an accumulator which keeps its E.M.F. longest and drops down quickly to its safe maximum discharge voltage is much better than an accumulator which may run at a uniform rate throughout. I quote this latter from Sir Oliver Lodge. I have taken the trouble to get out the results of two cells, 20 amp. hour each, one solid and the other liquid, the plates being fully formed, using the same method as your correspondent, taking the precaution to use in conjunction with the 4-volt lamps, which I tested for equal consumption, an amperemeter. The result is as follows:—*25 amp. 4 volt, Solid Cell—Started at 4.4 volt, ran down to 4 volt in 22 hours, 3.7 volt in 28½ hours. 25 amp. 4 volt, Liquid Cell—Started at 4.4 volt, ran down to 4 volt in 24¾ hours, 3.7 volt in 25 hours.*

This clearly shows that a solidified cell takes a much longer time to discharge with the same methods as used with liquid. Your correspondent need not make such secrecy over curing sulphate cells. There are two methods which can be done by the user, as follows:—Slight sulphating can be got rid of by the addition of a little ordinary washing soda, as much as will go on a threepenny piece to each cell, to the existing acid. A few hours charging will shift it. It should then be washed out carefully and fresh acid put in and re-charged. Bad sulphating can be shifted by placing in each cell a solution of ammonia and water in the proportion of a teaspoonful of .880 sp. g. ammonia to a pint of water. This should be vigorously shaken about in the cell, and in a short time the insoluble sulphate of lead will have settled down to the bottom in the form of mud. This should then be dealt with as in the first case.—Yours faithfully, S. J. WATSON.

THE LANGUAGE DIFFICULTY.

BIGGS (studying): "Un—deux—trois—quatre—quatre—et—. What comes after quatre?"

BIGGS (packing): "Sure I dunno. Dogs?"

The Jointed Inner Tube.

Sir,—Since I wrote some time ago commending a jointed inner tube that I had lighted upon, I have tested it over seven hundred miles of varied ground, and after reading "Veeaitch's" plea in a recent issue for quickly detachable brake shoes and a combination of mudguard with stand to lessen the difficulties of getting at a punctured tube, I am constrained to offer my experiences, and endorse my previous commendations of this splendid time and temper saver. But before doing so might I explain, for the benefit of those to whom the phrase "jointed inner tube" will have no significance, that it is in every respect like an ordinary good-class rubber tube severed with one clean cross cut, and fitted at each end with interlocking rubber shoulders which enable it to be easily and speedily converted into an endless air-retaining tube like any other? I should add that the ends are not butted like some I have since seen, and that there is no break in the continuity of the air chamber. Now for my experiences. After fitting them I rode 246 miles, and then picked up a staple with bent ends. It was raining, and I wheeled my machine under a Dutch barn near by, took out the tube, replaced it with a spare, pumped it up, and was off in 25 minutes. This was not very good time, perhaps, but four such holes as that staple made could not have been satisfactorily repaired in the time, especially as it was pitch dark. I then ran nearly 500 miles, neither tyre needing the least attention from the pump in the meantime, before picking up an ancient wire nail, full three inches long. This time a fellow motorcyclist witnessed the performance, and he will bear me out if he sees this, and I know him to be numbered amongst the army of readers of "THE MOTOR," when I say that I had the punctured tube out, the new one (the spare) in, and was riding alongside him in a fraction under eleven minutes. As pedal bikists, we have all heard of the three-minute repair, but as motorists we know that these lightning operations are not possible, and, further, we know of the uncertainty of the careful repair in which nothing has been spared. With such a tube as I am using—and a spare—expedition again becomes possible, and the fear of a bad repair vanishes. Of course, the damaged tube has to be repaired, but there is a vast difference in doing this leisurely at the hostelry where one dines or teas and on the roadside, the centre perhaps of a crowd of interested onlookers, or maybe in the dark, or the rain. Personally, if I were going over 300 miles I should carry two spares, to reduce the likelihood of a roadside repair being necessary, which, without one was extremely unlucky, should not be, unless one is too lazy to do the needful at one's stopping places. I must shelter myself behind "Veeaitch's" title, "The Importance of Details," for the length of this letter, and would add that this detail is one which in effect eliminates tyre troubles, and so becomes an all-important one. I might mention that this air tube is made by the Self-Sealing Air Chamber Co., Hinckley Street, Birmingham. Beyond my desire to let fellow-readers know of a good thing, I have no interest whatever in recommending it.—Yours faithfully,

SIGMA.

[A large number of letters are again held over. These will appear as soon as space permits.—ED.]

OUR INFORMATION BUREAU

SPECIAL NOTICE.

The Editor is at all times pleased to answer any queries put to him by the readers, or to receive correspondence from readers upon any motor topic. In consequence of the large number of letters received, however, he must insist upon the following simple rules being strictly adhered to:—

1. Plain writing. Type writing for preference.

2. All letters to be written on one side of the paper only.

3 Questions to be clear, terse and to the point, without tedious preamble or needless flattery.

4. Should an immediate reply be required, an envelope must be enclosed bearing a penny stamp, and the name and full address of the sender. NOT a stamped undirected envelope.

C.E.O. (Burgess Hill).—(1) Yes, it is always better to manipulate the clutch in preference to the throttle when running through traffic. (2) When climbing moderate hills skilful manipulation of the clutch will often obviate the necessity of changing gear. On the first sign of the engine labouring, if the clutch is eased a little the engine will pick up speed again sufficiently to take up the drive. Of course it requires practice to effect this operation, as it is important not to let the momentum of the car fall away to any extent.

Noisy Engine.

W.C.S. (Chelsea) writes:—Will you please be so good as to tell me whether by any means I can reduce the terrible clicking noise made by the mechanical valves of my 2¾ h.p. engine? It is unbearable, and it is quite impossible to converse with anyone riding alongside. Would less powerful springs effect a remedy?—There is no effective remedy that we can suggest. The noise is one of the disadvantages of the mechanical valve. Possibly you have extra strong springs fitted. If so, weaker ones would be of some slight advantage. You would have to experiment, because unless the springs are a certain strength power will be lost.

Dry Cells v. Accumulators.

J.B.B. has run his motorcar with dry batteries, and they have held their electricity for five months. He wishes to know if he changes to accumulators can he rely upon the spare and unused accumulator holding its electricity for a similar period?—It would not do to leave any accumulator for a period of five months without an occasional recharge. A good cell would retain a good part of its charge for this period, but sulphating of the plates would have set in to a more or less extent, and its capacity and future efficiency impaired. A charge up for an hour or so every six weeks would keep the cells in first-class condition.

R. S. Potter (Ilford) writes:—Owing to an accident my water-cooled Humber Olympia tandem has been under repair. I have taken the opportunity to have a Bowden exhaust lift fitted. I have a separate electric switch (Mason and Brown pattern on handlebar). I should be glad if you would give me a few hints on the proper use of an exhaust lift. I suppose one can lift it without cutting current off, and how should throttle be placed for traffic driving by exhaust lift? I presume it should not be closed to its minimum, as machine would hardly pick up again readily, and I take it the ignition should be slightly advanced from its extreme back position.—You will find it is best to have the gas about two-thirds full on, and ignition about midway, that is to fire on completion of compression stroke. If you fire later, you get explosions in the silencer. You can, of course, lift the valve without switching off.

Breakage of Spokes.

S.E.B. (London) writes:—I have been troubled of late with the spokes in the back wheel of my 4½ h.p. Humber cycle breaking. It was new at the beginning of last year, and has altogether been ridden 4,400 miles. In the last two months eight spokes have broken, and I should be glad if you could give me any reason why this should happen. Could I rebuild the wheel myself with thicker spokes. As far as I can see I think I could manage the job if there is no hidden mystery which requires professional skill and practice. Where would I be able to get spokes, etc., and what gauge would you recommend?—It is not easy to account for spoke breakages. Excessive vibration and road shocks would do it, or it may be due to the rigidity of the chain drive. It could hardly be the fault of the workmanship in building the wheel, although it is just possible too light a gauge of spokes were used. We advise you not to attempt to rebuild the wheel yourself. It requires much experience. Any good local cycle builder will do the work satisfactorily, and at a reasonable cost. If you attempt the repair yourself you will experience much difficulty in getting the wheel true.

Phenomenon Explained.

"Excelsior" (Leicester) writes:—A most extraordinary thing occurs on my motor-bicycle, especially when it is running at a steady and fair rate of speed, say, at about 20 miles per hour. Almost on every ride I notice it. A sort of screech occurs in the cylinder, and when this happens the machine seems to pull up for an instant, and then it goes ahead again at full speed. It cannot be failure of lubrication, as I take care that this is efficient. Can you suggest a reason?—In our opinion what occurs is an occasional back-fire from pre-ignition. The inside of the combustion chamber is probably lined with charred oil. This gets red-hot in some parts and fires the charge prematurely.

A Question of Gear, etc.

A.W. (Prittlewell) writes:—I have a 3 h.p. Fafnir engine with which I am extremely pleased in every way. The original gear was 4½ to 1. In order to climb hills better and without pedalling—sometimes with trailer—I think of purchasing a smaller engine pulley which, I know, will reduce the gear to about 6½ to 1. (1) Is the change likely to decrease speed greatly? If so, how much? (2) Will the engine overheat and fan-cooling become indispensable? With the old pulley I have never been troubled with overheating. (3) What are the advantages (or drawbacks) of having 28 in. wheels instead of the usual 26 in? Is that better or worse for hill-climbing? (4) My engine requires a large amount of lubrication: a full charge, say, every eight or ten miles. There seems to be a large charred deposit on top of piston and cylinder walls, and I have only ridden the machine about 1,200 miles without ever having taken engine to pieces. Does this imply bad quality of oil? The piston rings must fit well as I can stand quite a long time on pedal without overcoming the compression. (5) Would a leak in the piston rings account for heating of crank case? (6) I always ride with full air. I found that by opening the small hole in inlet pipe I increased the speed. Do you think a second extra air hole would further improve matters?—(1) Yes, reducing gear to 6½ to 1 will decrease maximum speed about eight miles per hour. (2) The engine would not necessarily overheat, you would have to experiment to find it out. (3) There is a little less vibration with the 28 in. wheels, and the steering as a rule is better. (4) Looks as if the oil got rather thin with the heat. It is probable the piston rings are worn slightly. (5) As a rule it would, but sometimes a hot bearing will warm up the crank case perceptibly, but in this particular it is more probable to be an escape past the rings. (6) It looks as if you require more air for carburation. Perhaps the best plan would be to enlarge present hole, say, to ⅜ths, and fit an adjustable slide over it.

B 20

BUREAU.

"Nemo" (Lincoln).—You could have a duplicate high tension ignition from a small accumulator and coil coupled up to the spark plug of engine in addition to the Simms' high tension magneto if you wished. Such an arrangement would, however, be very unusual and complicated. From our own experience of the Simms' high tension magneto, it will start up an engine at a few hundred revolutions per minute, providing there is a proper charge of gas entering the cylinder. If you adopted the duplicate system you would require a switch to break the high tension circuit as well as the battery circuit, otherwise it would interfere with the current from the magneto.

Altering Contact Breaker.

J.W.B. (Ramsey) writes:—I have a motor-tricycle (3½ h.p.), non-trembler coil, make-and-break contact arrangement, and Longuemare carburetter. I want to increase the spark, as the explosion does not occur quickly on attempting to start. (1) Will a "trembler" coil improve the spark, and is it necessary to have "wipe" contact for same? (2) If so, will the trembler coil and wipe cam suffice if the platinum pin be removed? In short, what alteration from the old to the new is necessary?—(1) You will find a high speed trembler coil enable you to start much more quickly, but it does not necessarily follow that you will get more power out of the engine. (2) Your best plan would be to have the make-and-break cam taken off the shaft and a brush contact fitted. These can be bought in numerous sizes, but it is necessary to see that the contact ring is fitted on shaft by an experienced man. Another alternative is to screw up the platinum tipped screw of present contact to press firmly on blade when cam comes round.

Ignition at Fault Probably.

F.H.W. (Weedon) writes:—Some two months ago I bought a 2¾ h.p. Minerva machine, and it has served me well until on a recent run, when approaching London it started to misfire. I renewed the platinum points (make and break), changed to the second accumulator, and reached my destination. On the next run I was let down by same trouble outside St. Albans, and after 2½ hours in a repair shop, I started again, only to have the same difficulty and get stranded at midnight at Dunstable. I found that I could get along by retarding the spark to slowest speed, with only an occasional misfire, but if speed was accelerated a misfire occurred at about every eighth revolution. The carburetter is clean, the accumulator is all right, giving a good white light with testing lamp, the wiring is apparently all perfect, and the spark is all right at plug. I have tried everything possible to remedy matters, but the misfiring still occurs.—We are fairly certain you will find that your trouble is due to one of the following causes: (1) Accumulator has no capacity and loses charge; (2) slight crack in spark-plug; (3) bad contact, probably at make and break; (4) short circuit. From the fact that the spark misses when advanced it shows it is either a feeble one or short circuiting at some point.

B 30

J.S. (Birmingham) writes:—I have a 2¾ h.p. motor-bicycle of first-class make. It comes out very heavy, I should say not less that 185 lb. It runs exceedingly well on the level, in fact, I simply dare not open the throttle more than quarter-way or it would reach 40 miles an hour in no time. But strange to say, when I try to get the machine to take a steep hill, say 1 in 9 or so, it simply will not do it, and I invariably have to dismount. The power dies away very gradually. There is no misfirings, simply the explosions get weaker and weaker. I believe the gear is 1 to 3½. Is this too high?—The trouble we think, is simply that the machine is geared too high for hill-climbing, 1 to 3½ is a track racing gear. You should not gear higher than 1 to 5, especially as you have so much weight to be propelled. It is this factor which tells in hill-climbing.

Motor-bicycles in British Central Africa.

A.S. (Zomba) writes:—I should be glad of your opinion on the following matter: I am using a motor-bicycle here in Central Africa. The engine is a Minerva, 3½ h.p. The machine is geared as low as the back wheel will allow of, as what is wanted on our very rough roads is a slow-speed but plenty of power for hills. I can say that it has been a great success, and I have now ridden some 700 miles on it without a breakdown of any description. I am still using the same (V shape) belt it had on when it arrived, which has only once required taking up. I am in doubt, however, whether, instead of a high-powered and extremely heavy machine I should not do better with a light one of much lower power, making my mind up to do pedalling on the hills. Against this is the fact that none but a very strongly-built bicycle would stand the tremendous shaking experienced here. I am inclined to think that the most suitable machine would be one having an engine of not over 1¾ h.p., weighing not over 80 lb. with all on, except petrol and oil. Could such a machine be built to stand the frightful racket one gets here? If so, what would you recommend? My average pace is 12 to 14 miles. This, of course, would seem absurd at home, but the vibration, or rather I might call it the pitching about, prohibits anything over that except on very occasional bits of road. Every part of the machine is being tried severely from start to finish. I know that machines are now made of 2 h.p. weighing only 80 lb., but what about the strength of frame?—We should be reluctant to recommend as low a weight as 80 lb. for exceedingly rough roads, but we should say that an additional 15 lb. distributed over the machine at vital parts would make it perfectly safe. Then a great deal depends on what the hills are like. With a single gear a 2 h.p. machine, even at a light weight, cannot reasonably be expected to climb a stiffer grade than 1 in 9 unaided. In England this is a stiff hill to meet with on main roads. With a two-speed gear you could reckon on surmounting 1 in 6, but you could not gear lower for steeper hills without engine racing and overheating. Just at present we do not think you will get a machine to come up to your requirements exactly. The nearest, perhaps, would be a Clement-Garrard, with 2 speeds and 2 h.p. and specially-built frame, with 2¼ inch back tyre and spring front forks. This would come out just about the 100 lb. There will doubtless be some interesting developments in the direction of lighter mounts very shortly by several makers, and it might be worth while to wait and see what is coming.

W. P. Sinclair (Belfast).—(1) The band made by the Lion Motor Band Co., Nantwich, Cheshire, looks a good thing from the way they secure it to the cover. You must be prepared to lose a few miles an hour speed. It is impossible to fix anything in the shape of a leather band on the cover and not lose some resiliency. (2) Any local repairer could make a cut-out. A metal collar having a hole in it and mounted on the exhaust pipe so as to open or close a ½-inch hole in the latter is about the simplest. (3) Would not advise you to have liquid acid replaced by the composition you mention. Keep only sufficient acid in cells to reach top of plates, and have the terminals well coated with vaseline. This will stop the corrosion considerably.

ANSWERS BY POST.

In addition to answers appearing on these two pages the following correspondents have been replied to through the post:—

Friday, September 30th.—F. Wimbush (N. Finchley), J. Duckworth (Accrington), T. Morris (Bourne), H. Mumford (London), H. G. Lane (Sheerness), H. Kenway (Birmingham), J. L. Miller (London), H. Klooz (London), H. C. Trott (Sydenham), J. Whitford (London), F. E. Coxen (Kingston), D. Duguid (Port William), V. H. Sowry (Belvedere), A. B. Cary (Hythe), G. Roberts (Twyford), H. J. Sutton (Waldringfield), A. E. Oliver (Hornsey), F. W. Daw (Ebbw Vale), W. Maack (Hull), A. Wood (Manchester), K. Lankester (Kingston), E. Jackson (Lancaster), E. T. Jones (Penygraig), H. Hughes (Selly Oak), W. E. Milne (Stamford).

Saturday, October 1st.—T. Wilson (Nottingham), J. R. Bonsall (New Sawley), W. R. Pitts (Deptford), J. C. Shea (Silloth), H. E. Gorst (London), W. E. Cooke (Alderley). T. C. Murphy (Islington).

Monday, October 3rd.—T. A. Morris (Bourne), G. Terry (Bamford), D. Brandley (Princes Risborough), E. Gostling (Stratford), J. Kendrick (Newcastle), P. W. Lynham (Highbridge), H. R. Irving (Belfast), K. Woodhouse (Preston), T. J. Price (Gravesend), S. L. Hollis (Glasgow), J. Robinson (Windsor), H. Naylor (Halifax), J. C. Parker (High Wycombe), F. C. Schone (S. Norwood), F. R. Chalk (Collington), J. Smith (Bradford), T. M. Moilliet (Cowes), E. N. Story (Caterham Valley).

Tuesday, October 4th.—W. Robb (Keith), S. Everitt (Wells), J. L. Douglas (Market Harboro'), W. Getting (London), T. A. Brassey-Salt (Birkenhead), J. Crossley (London), J. W. Scott (Penrith), C. Fairbairn (West Wratling), D. Souter (Hedon), J. Hewertson (Windermere), W. Bottomley (Southport), W. Jeffrey (Alton), F. Hills (London), A. Lee (Nottingham), C. Black (Upminster).